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Globalisation and the Welfare State – A Meta-Regression Analysis

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Abstract

The effect of economic globalisation on the welfare state is a widely polarised debate in the scholarly literature. In essence, there are three possible effects of this relationship: economic globalisation increases welfare, decreases welfare or it has no effect. By applying meta-regression analysis to 33 empirical studies, this thesis concludes that globalization have a positive effect on the welfare state, although it is quite small. Moreover, the thesis finds that publication bias is not a problem in this literature. Finally, the findings of the thesis suggest that there is large heterogeneity between studies, and that this heterogeneity can account for much of the variations of the differences between studies.

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Introduction

The effect of economic globalisation on the welfare state is a widely covered topic in the scholarly literature (Genschel 2004, Koster 2009, Schulze and Ursprung 1999, Ursprung 2008). Following the expansion of globalisation, three distinct hypotheses in the welfare state globalisation nexus can be derived, and the hypothesis suggests very different outcomes. The first hypothesis argues that globalisation reduces welfare efforts (Burgoon 2001, Kaufman and Segura-Ubiergo 2001, Swank 2002), the second that the welfare state expands (Garrett 1998, Rodrik 1998, Katzenstein 1985, Avelino, et al. 2005), and the third that other forces rather than globalisation affect the welfare state (Iversen and Cusack 2000, Pierson 1994). Although many studies have been conducted on the effect of globalisation on the welfare state the literature produces inconclusive and mixed results. Genschel (2004:631) notes that "a lot of quantitative and qualitative research has been spent on this question. The results, however, have remained inconclusive". Gemmell, et al. (2008:156) further argue that "the overall conclusion must be that the evidence is ambiguous. Studies supporting the efficiency hypothesis are broadly balanced by a similar number of studies favouring the efficiency hypothesis". Some previous qualitative literary reviews (cf. Schulze and Ursprung: 1999 and Koster: 2012) have been conducted, but these reviews have also remained inconclusive. The common denominator however, is that globalisation *per se* has not resulted in a dramatic 'race to the bottom' in terms of welfare spending.

Given the inconclusive results of previous studies, which form the main motivation for this thesis, a meta-analysis, and more specially, a meta-regression analysis is applied to investigate the impact of economic globalisation on the welfare state. The meta-regression approach is very suitable for reviewing an inconclusive literature.

Methodologically, the thesis contributes to the growing field of the application of meta-regression analysis in political science. Although meta-analysis in political science is a relatively new method in the field, a growing numbers of meta-regression analysis, for example on democracy and economic growth (Doucouliagos and Ulubasoglu 2008a), aid and democracy (Askarov and Doucouliagos 2013), institutions and economic performance (Efendic, et al. 2011) and economic voting (Ludvigsen 2010) have been conducted. Moreover, the thesis explores a debated topic in international political economy and comparative politics that has not been subjected to a meta-analysis before.

The thesis aims to answer the following research questions with the corresponding hypotheses:

Q1: What is the effect of globalisation on the welfare state?

By investigating a wide variety of studies, a meta-analysis can be used to find the effect of globalisation on the welfare state. Although the preliminary step in a meta-analysis is to reveal an effect, the method can offer much more, which is reflected in the two following research questions.

Q2: Is publication bias present, and does it affect the literature?

A central topic when conducting a meta-analysis is to investigate whether publication bias is present, i.e. if editors, reviewers and authors treat significant results as more important than non-significant results, hence producing a biased literature. Publication bias is often found in research areas with a high degree of agreement. Therefore, challenging the conventional wisdom and reporting "results that are at odds with dominant theory will find it harder to be believed and hence to get published" (Doucouliagos and Stanley 2013:317). It might be possible that publication bias does not exist in the globalisation-welfare state literature , since articles and books supporting all sides of the discussion are present, and thus not favouring one side over the other which in turn suggest that all the results are theoretically possible and acceptable (Doucouliagos and Stanley 2013:318). Therefore, scholars and journals might not have any incentives to support only one side of the debate. However, testing for publication bias should always be done in the context of a meta-analysis since this is an available option, which also is possible to correct if found.

Q3: Are there systematically differences between the published studies?

Since a meta-analysis can serve as a special case of a multiple regression analysis, a third central topic is to investigate whether systematically differences between the studies can explain the variety of outcomes. Although some studies rely on the same data, different authors reach different conclusions. A meta-analysis can explain how different study

characteristics influence the results. This is done through a meta-regression analysis, where potentially important dependent variables (called moderator variables in a meta-analysis) are regressed on the effect size (the independent variable in a meta-analysis).

In answering these questions, a meta-analysis is applied to summarise the effect, to investigate differences between studies and to detect if publication bias is present.

Organisation of the Thesis

The thesis is organised in seven chapters. First a brief discussion of the concepts used in the literature is presented. The concepts are "economic globalisation" and the "welfare state". Then a review of the relevant literature follows. In essence, there are three distinct hypothesis about globalisations effect on the welfare state; one hypothesis suggest that welfare is reduced, the second that welfare is expanded, and the third that globalisation has no effect on welfare spending. In order to explain the large variation in the presented research in chapter 2, a meta-regression analysis is conducted to answer the research questions. The third chapter presents the chosen method meta-regression analysis (hereafter MRA). The chapter gives a justification to why the method is chosen, and presents the advantages of applying the method when reviewing an ambiguous and inconclusive literature. The chapter also lays out the steps that are necessary in order to fully conduct a meta-analysis from a graphical inspection of a funnel plot, to a simple bivariate analysis for publication bias (FAT-PET-MRA)and then, to a more rigorous multiple MRA. In the Fourth chapter, the data and variables used in the meta-analysis are presented and described. In order to do a meta-analysis a meta-dataset must be created. This dataset is essentially a collection of regression estimates from studies that fulfil some eligibility criteria. The chapter includes descriptive statistics of the dependent and independent variables, and a presentation of different measures of the effect size. In a MRA the effect size is the independent variable while moderator variables act as the dependent variables. These variables are either collected from the sample of studies, or justified as theoretically important based on previous studies and the literary review in chapter 2. The fifth chapter consists of the analysis of the data presented in chapter 4. The MRA is conducted. The first step in this process is to visually test for the presence of publication bias through a funnel plot. Further the FAT-PET-MRA follows in order to detect potential publication bias and a genuine empirical effect statistically. In order to explain the large

heterogeneity in the studies on globalisations effect on the welfare state, a moderator analysis, or MRA is conducted. Several models are reported in order to ensure robustness. The sixth chapter is a discussion of the results found in analysis. The seventh and final chapter is the conclusion which summarises the thesis and a discussion of the practical effects of the findings. In addition some suggestions for further research are presented.

Chapter One: Conceptualising the Welfare State and Economic Globalisation

First of all, a brief discussion of the key concepts used in the literature is useful to address "what the participants in the debate mean when they refer to globalisation or the welfare state" (Genschel 2004:616). These two concepts are the "welfare state" and "globalisation".

Genschel (2004:616) argues that the conceptualisation of globalisation and welfare is almost uniform across studies. Therefore a larger question in the literature in general is how the welfare state and globalisation should be measured. These questions have raised a serious discussion on 'the dependent variable problem' regarding the welfare state, but also an 'independent variable problem' in terms of globalisation.

The welfare state is a widely covered topic in the scholarly literature, see for example Pierson and Castles (2006) and, Castles and Leibfried (2010) . Schulze and Ursprung (1999:337) suggest that the normative *raison d'être* for the welfare state are "the provisions of public goods and income redistribution, whereby the latter may be based on social insurance arguments or on altruism.

According to Green-Pedersen (2004:5-6), the welfare state definition can be divided into policy definitions and outcome definitions. Policy definitions entail those benefits provided by the state (e.g. unemployment, health benefits, and child care) while outcome definitions can be linked to certain outcomes. In the globalisation-welfare state debate, and this thesis, emphasis is put on the former.

Any study of the welfare state cannot avoid the influential typologies of the welfare state by Esping-Andersen (1990). In his work, Esping-Andersen argues that there are three different worlds of welfare. The worlds are characterised by the levels of decommodification[1] and social transfers[2]. This welfare classification can be said to be related to the outcome definition of the welfare state since different actors (the left and labour unions) are linked to the outcomes of the welfare state. For example, scandinavian welfare states are characterised by high levels of decommodification, in this world, the left has traditionally enjoyed political power over a long period of time. On the other hand, liberal welfare states, e.g. the US, are characterised by means testing and modest social transfers predominates, where especially left party power and labour unions have been less dominant (see Esping-Andersen 1990: 9-33)

[1] Defined by Esping-Andersen (1990:23) as when "citizens can freely, and without potential loss of job, income, or general welfare, opt out of work when they themselves consider it necessary"

[2] For the operationalization and scores for the decommodification index, see Esping-Andersen (1990) chapters 2-4

The Concept of Globalisation

Globalisation in relation to the welfare state should be understood as economic globalisation although some authors have taken other globalisation variables into account. Broadly, economic globalisation (hereafter globalisation) can be defined as:

> Increasing goods and factor market integration, whereby a completely integrated market is characterised by the absence of any impediments in international mobility of commodities, services and the production factors capital, labour and technology. Globalisation can thus be defined as a reduction in international arbitrage costs (Schulze and Ursprung 1999:301).

For more thorough reviews, consult either Schulze and Ursprung (1999) or Glyn (2006) that comprehensively discuss the concept of globalisation. There is no disagreement that globalisation is finding place (Garrett 2000, Therborn 2000) however, the causes of globalisations are disputed, as discussed more in length by Garrett (2000). Jahn (2006) argues that globalisation suffer from a "Galton Problem" i.e. that "one source of confusion about the impact of globalisation on domestic policy is the inappropriate analytical and methodological treatment of international interaction." (Jahn 2006:402). Jahn therefore suggests that the concept of globalisation should be understood as diffusion.

With the policy definition of the welfare state in mind, the next chapter presents a wide variety of studies investigating the effect of globalisation on welfare spending and its effect.

Chapter Two: Efficiency, Compensation or No Effect? – A Review of the Literature

This chapter presents the literary review of the thesis. Since the chosen method for the thesis is a meta-regression analysis, it is essential to provide an overview of the relevant scholarly literature and the corresponding ambiguous hypotheses

First, a brief presentation of some seminal works exploring the welfare state-globalisation relationship is presented. Then a presentation of the three welfare state-globalisation hypotheses follows – the efficiency hypothesis, the compensation hypothesis and the sceptic hypothesis. Finally, some aspects that might explain the inconclusiveness of the field, i.e. heterogeneity between studies, are discussed.

Linking Globalisation and the Welfare State

A natural point of departure would be the seminal works of Cameron (1978) and Katzenstein (1985). These two studies suggest that economic openness leads to corporatism and an expansion of the welfare state, thus being the forerunners of the compensation hypothesis specially, and the debate about globalisations effect on the welfare state generally.

Providing a detailed analysis of small states in a global economy Katzenstein (1985:47) argues that "the small European states compliment their pursuit of liberalism in the international economy with a strategy of domestic compensation". Thus Katzenstein(1985) suggests that small, open economies are able to couple a generous welfare state with the growing risks created by globalisation. Cameron (1978) also finds supporting evidence for larger government spending in open economies in his study of 18 OECD countries and states that 'Nations with open economies were far more likely to experience an increase in the scope of public funding than were nations with relatively closed economies' (Cameron 1978:1253).

Following a "positive" view on the welfare state in the global economy, a new school of thought emerged. This school argues that the "welfare state is in crisis" (Huber and Stephens 2001) and that there is a "race to the bottom" in welfare spending mainly due to restructuring in welfare states. Even the most generous social democratic welfare states experienced cutbacks (Pierson 2001b: 441-444). These rearrangements are in the works of Paul Pierson (1994, 2001a,b) labelled retrenchment, which refers to "policy changes that either cut social

expenditures, restructure welfare state programs…or alter the political environment in ways that enhance the probability of such outcomes in the future" (Pierson 1994:17)

In recent years several authors (Kittel and Winner 2005, Plumper, et al. 2005, Podesta 2006) have called for the application of statistically better models in the investigation of the welfare-globalisation nexus, and provides guidance and suggestions when modelling regressions. These methodological "remedies" often find no significant relationship between globalisation and the welfare state, and rather suggest that domestic factors plays and important role for the welfare state. Following the seminal works of these authors, the field has grown large over the years, and numerous articles and books have been published.

In essence there are three hypotheses about the effect of globalization on the welfare state. Based on the literature, these three hypotheses can be identified as the efficiency hypothesis, the compensation hypothesis and the sceptic hypothesis. The first suggests that welfare is reduced, the second that welfare is increased, and the third that there are no connection between globalisation and the welfare state[3].

The Efficiency Hypothesis

The efficiency hypothesis (neoliberal, globalisation theory) in its simplest form suggests that globalisation creates a "race to the bottom" in terms of welfare spending. In other words, the welfare state is reduced. The efficiency hypothesis focus on "the economic cost of large and progressive public economies" (Garrett and Mitchell 2001:151), and can be linked to the supply side of the nexus. Several authors have different suggestions to why this "race to the bottom" finds place. Casually, the argument is based on a proposal that global economic integration limit governments' ability to commit to redistributive macroeconomic policies in order to attract investments and facilitate for business interests[4], thus lowering the tax base that could be used on welfare, and in turn making international competitiveness and efficiency the primary goal. These restrictions are grounded in several mechanisms that put pressure on

[3] Other explanations included in this section are that there exists a curve-linear relationship between globalisation and the welfare state, and various non-significant effects.
[4] This is essentially the structural dependence of the state on capital hypothesis. See Przeworski and Wallerstein (1988) for a critical review.

states and governments in order to create an efficient environment for capital, most of these restrictions are grounded in the interplay between taxation and welfare policies. [5]

First, one line of argument suggests that in order to avoid high domestic taxes, capital can shift their assets to low tax countries, hence an "exit becomes a viable option and a credible implicit threat" (Genschel 2004:623, see also Steinmo 1994). This exit option can ,according to Swank (2002:24), be used by business " as leverage in legislative, centralized bargaining, and executive branch policy-making forums, enhancing the conventional political resources that are commonly brought to bear in efforts to shape policy". Further, Huber and Stephens (2001:224) suggest that capital in general has strong leverage over governments and labour unions.

Another facet of globalisation is growing tax competition among governments. Bretschger and Hettich (2002:714) "find that national governments lower corporate taxes as a consequence of increased globalisation". Ha and Tsebelis (2010:7) suggest that since international capital and companies are a part of the tax base, "governments that maintain existing levels of social protection have to risk consistent tax revenue reductions. In order to keep these footloose international investments, states have to reduce taxes on corporations". This in turn will therefore result in tax revenue reduction.

The reduction of tax burdens are also of crucial importance for the business-friendly government. Swank (2002:28) suggest that governments are facing a pressure to "reduce tax burdens on domestic producers in order to lower labour costs and to enhance the price competitiveness of exports" in order to attract international investors. Thus, by reducing taxes, governments will have to pay the price of a lower tax base at the expense of lower redistributive welfare spending.

Garrett and Mitchell (2001:174) suggest that "greater exposure to trade results in lower government spending" [6] in their analysis of OECD countries between 1961-1993. Burgoon (2001) also demonstrate through his time-series analysis of 18 OECD countries in the period from 1980 to1995 that general trade openness has a negative effect on the welfare state. Focusing on Latin America, in their time-series analysis of 14 countries from 1973 to 1997, Kaufman and Segura-Ubiergo (2001) provides evidence that "trade integration has a

[5] There is a large literature on the effect of globalisation on capital taxation. See Adams et. al, (2013) for a review. Although taxation is important for understanding the welfare state, the focus in this thesis is on the effect on the welfare state, not on taxation.

[6] Although they find evidence for both the efficiency and compensation hypothesis.

consistently negative effect on aggregate social spending" (Kaufman and Segura-Ubiergo 2001:554). This is also the most robust and strongest finding in their study.

Therefore, the efficiency hypothesis can be argued to capture the supply side of the nexus, i.e. how governments have to meet the terms of business in order to attract investments and stay competitive in the international market.

The Compensation Hypothesis

The compensation hypothesis, on the other hand, argues that globalisation has a "positive" effect on welfare spending, i.e. welfare spending increases, and relates to the demand side of the nexus. This demand is created as a direct consequence of globalisation.

Given that there are losers suffering the consequences of globalisation, according to Ursprung (2008:2) the "workers who become exposed to higher labour market risks", a demand is created by citizens to increase welfare benefits. According to Rodrik (1998:998) "Societies seem to demand (and receive) an expanded government role as the price for accepting larger doses of external risk. In other words, government spending appears to provide social insurance in economies subject to external shocks". The risks at work in this regard are "increased economic volatility or induced structural adjustments to the economy…that might trigger economic insecurity and job losses" (Schaffer and Spilker 2009:5) which in turn creates a demand for a cushion, the welfare state.

Furthermore, the compensation hypothesis takes a more partisan point of departure than the efficiency hypothesis. Since (especially) leftist parties tend to be more committed to redistribution (Iversen and Soskice 2009; Huber and Stephens 2001) the compensation hypothesis also takes political incentives to expand welfare into account. Garrett (1998:11) also suggests that "globalisation has increased the political incentives for left-wing parties to pursue economic policies that redistribute wealth and risk in favour of those adversely affected in the short term of market dislocations"

Garrett and Mitchell (2001:151) also suggest that there are "clear political incentives to expand welfare effort in response to internationalisation due to increasing inequality and increasing economic insecurity". In the forefront of this school, the contributions of Geoffrey

Garrett should be noted. In his work on partisan politics and the global economy, Garrett (1998, 2001) suggest that when globalisation is met by strong left-labour powers, governments will contribute to an expansion of welfare expenditures. Rodrik (1998) investigates the relationship between governments and globalisation, and find that governments play an important risk reducing role when met by globalisation in his cross-sectional study of 68 countries. Ha (2008), in her study of 18 OECD countries 1960-2000 also find evidence in support for the compensation hypothesis. Gemmell, et al. (2008) also find some supporting evidence of compensation in their time-series analysis of 25 OECD countries from 1980-1997, where FDI have a significant effect, and shift spending upwards. Avelino, et al. (2005) find a significant relationship between trade openness and social spending in their study of 19 Latin American countries in the period from 1980 to 1999[7].

The Sceptics

A third school of thought claims that other factors rather than globalisation are significant for the expansion or retrenchment of welfare states. This school operates mainly in the domain of the retrenchment literature. Although, empirically, it seems to be a relationship between the growth of globalisation and welfare state retrenchment, the sceptics are questioning this relationship. They rather suggest that socioeconomic changes occurring within countries are the driving force of welfare retrenchment. Furthermore, researchers in this field tend to find statistically insignificant result of globalisation when these socioeconomic factors are controlled for.

Although the period studied can be argued to be the era of globalisation, other changes within both countries and policy-making have resulted in pressure on welfare delivery according to this school of thought. Further, more generally, some authors argue that globalisation does not have an effect at all, given that globalisation indicators do not have a statistically significant effect on welfare spending. (e.g. Iversen and Cusack 2000). The reason for accusing

[7] A growing field in the literature argues that there exists a curve-linear relationship between the welfare state and globalisation. The curve linear relationship suggests a merging of the two conflicting hypotheses presented above. This implies that up to a certain point, globalisation will affect the welfare state positively, then, at some stage, globalisation will have a negative effect. The curve-linear effect is argued to find place" because of the need to make it politically feasible to expose the economy to international trade and capital". (Brady, et al. 2005:924). This will, however, not be tested for.

globalisation for welfare retrenchment is in Genschel's (2004:627) words that "increases in cross-border economic activity are easier to observe than obscure changes in technology and social consumption"

The findings from Dreher, et al. (2008) suggests that globalisation does "not influence the composition of government expenditures in a notable way" (Dreher, et al. 2008:263). By using two different datasets and employing the KOF index of globalisation they reach the conclusion that welfare states have not been seriously affected by globalisation.

In his qualitative work on welfare retrenchment Pierson (2001a,b) argues that among other factors, changes in household structures, and the ageing of the population puts downward pressure on mature welfare states. Pierson argues that "changes in the global economy are important, but it is primarily social and economic transformations occurring within affluent democracies that produce pressure on mature welfare states" (Pierson 2001b:410). Such transformations might include changes in the employment sector, i.e. deindustrialisation,(Iversen and Cusack 2000) and changes in demography occurring within states,

Iversen and Cusack (2000) argue that deindustrialisation rather than globalisation plays an important role in welfare state expansion in their study of 15 OECD countries from 1961 to 1993. Iversen and Cusack suggest that risks generated in societies results from "the interaction of sector-specific skills and domestic economic processes". Furthermore, a driving force behind [welfare] expansion is "the labour market dislocations associated with major shifts in the sectoral-occupational structure" (Iversen and Cusack 2000:324). Moreover, they do not find any statistically significant effects of globalisation on government transfers in their study.

By reassessing the statistical approaches of Garrett and Mitchell (2001), Kittel and Winner (2005) shows that the underlying statistical justifications and thus the results are driven by mis-specifications. Kittel and Winner`s (2005:287) study thus conclude that "neither globalisation, nor the partisan composition of governments play a role in explaining…the dynamics of government expenditures". They rather suggest, supporting the findings of Iversen and Cusack (2000), that domestic changes influence expenditures.

Heterogeneity

As this literary review has shown, there is a wide variety of possible explanations that are both theoretically and empirically possible. Hence the result is that the literature contains a large degree of heterogeneity that can affect the empirical findings. For example Genschel 2004(632) notes that some reasons for the differences in outcomes can be explained by "the sample of countries, time period, operationalisation of the variables, model specifications and controls". In order to explain this heterogeneity, the following characteristics listed below can be considered as theoretically important in explaining the differences between studies. Additionally, these features are taken into account as the independent variables in the MRA.

Measure of welfare state

In the literature, there are several ways to operationalise the welfare state. In essence there are three common approaches to measure the welfare state utilised in the literature: Total government social expenditures in terms of GDP (OECD 2012), an updated data set based on Esping-Andersen's work on the three worlds of welfare, The Comparative Welfare State Entitlement Data Set (Scruggs, et al. 2014), and expenditure categories (school, health, pension etc.) related to welfare in terms of GDP (OECD 2012). There are theoretically good arguments for each of the measures.

Obinger and Wagschal (2010:334) argue that "social expenditure is…an important aspect of the dependent variable in comparative social policy research". First, they argue that social expenditures are easily available, secondly, the data contains observations over a long period of time, and thirdly, by including "private and after-tax spending now provides important insight into what "welfare states do" (Obinger and Wagschal 2010:352). However, it is argued that although some states have relatively high welfare state expenditures, the structure of the spending and the "welfare delivery" might be very different from country to country. Korpi (1989:310) points out that the widespread use of expenditures are "largely data driven, and that expenditures only indirect bearing on what is the core of the modem welfare state"
Welfare expenditures are also sensitive to business cycles (Ha 2008, Huber and Stephens 2001). Further, Scruggs and Allan (2006:56) argue that "conceptually, spending does not provide a sufficient indication of the welfare state's effects on individual life chances.

The second approach is the CWEDS (Scruggs, et al. 2014) which is a replication and further development of the work of Esping-Andersen (1990) who's main argument is that "it is difficult to imagine that anyone struggled for spending *per se* (Esping-Andersen 1990:21). Thus, the dataset have the structure of the welfare state as its point of departure. Among others, Brady et al, and Jensen et al, includes the CWEDS in their analyses. The main theoretical reason for including the CWEDS compared to welfare spending in terms of GDP are in Allan and Scruggs (2004:498) words that" such data cannot tell us very much about how, or on whom, the money is spent[8]".

The final approach relates to a disaggregation of different expenditure categories related to welfare expenditures, for example dividing the "welfare state" into health spending, pension spending etc.). Schulze and Ursprung (1999:347) have pointed out that some of the differences between studies might be due to "a lack of studies using strongly disaggregated public expenditure data". Ursprung (2008:3) have suggested that this approach is a better measure in order to better explain the scope and size of government expenditures. Rudra and Haggard (2005:1023) rely on this approach because it provides "additional information on the redistributive nature of spending". Avelino, et al. (2005:628) further suggest that pressure groups, for example teachers unions, can have a great impact on social policies, making this a substantial argument, and thus disaggregating welfare spending in different categories.

These approaches have resulted in a debate labelled the "dependent variable problem". Although there is a large consensus of the meaning of the concepts in the literature, a "dependent variable problem"[9] can be identified, i.e. "a noticeable absence of reflection on how to conceptualise, operationalise and measure change within welfare states" (Clasen and Siegel 2007b:4). This problem refers to how the welfare state should be measured and further conceptualised.

As this section has shown, there are three common approaches to operationalise the welfare state: total social expenditures of GDP, the CWEDS, and disaggregation of social expenditures. It certainly is reflection about the different measures in the scholarly literature; however, there seems to be no agreement on which measure that is considered to be the "best". Therefore, it is suspected, that the choice of the dependent variable in primary studies will be of importance for the results.

[8] See also Esping-Andersen (1990: 18-21) and Korpi and Palme (2003:432-433)
[9] Clasen and Siegel (2007a) particularly deal with the problem in their book subtitled 'The 'Dependent Variable Problem' in Comparative Analysis'. Pierson (2001b:419-422) also address the issue.

Measure of Globalisation

As with the welfare state, globalisation is also subjected to different approaches. Jahn (2006:402) suggests that there are several "established variables with respect to economic globalisation: trade openness, Foreign Direct Investments (FDI), interest rate differentials, portfolio investment outflows, or an index of financial openness." Other scholars state that an index of globalisation[10] better capture the concept. Gemmell, et al. (2008:156) note that "the use of a variety of measures reflects the difficulty finding suitable proxies for 'economic globalisation' or integration".

The KOF index of globalisation developed by Dreher (2006b:1093) provides an innovative measure of globalisation. The index is divided in sub-indexes, where economic globalisation account as one index containing actual flows and restrictions. Actual flows contain variables for FDI and portfolio investments, income payments to foreign nationals and capital employed. While restrictions are covered by variables measuring hidden import barriers, mean tariff rates, taxes on international trade and capital control. Dreher (2006b:1092) argues that "the overall effects of globalisation are what matters" and that an index will better capture the whole picture. Further, Dreher (2006b:1092) suggests that the problems of collinearity when separating globalisation measures are reduced, and since the direction of different globalisation variables might have different effects, a bias in the literature can occur if variables that are not of interest among researchers are left out. For example by excluding FDI from an analysis.

In their assessment of common pitfalls in the use of panel analysis in the welfare globalisation research, Kittel and Winner (2005:270) notes that "little effort is made to develop a concise theory as to why specific variables are entered into a regression and how they relate to each other". This problem is often present in the conceptualisation of globalisation, since scholars suggest using a widespread range of variables measuring globalisation.

Some authors argue that two globalisation variables are sufficient, while others (Ha 2008) have suggested that since globalisation is a multifaceted phenomenon, several variables are of importance. Some authors rely on variables that are typically associated with globalisation, for example trade, outward and inward FDI, capital mobility. Others have suggested that the KOF index of globalisation is a better measure to capture globalisation and insist on using the

[10] The most used index in this respect is the KOF index of globalisation.

index. The choice of the independent variables for globalisation can also be a culprit for heterogeneity between studies.

Left

A line of authors (Garrett 1998, Huber, et al. 1993, Huber and Stephens 2001) suggests that left party power can influence the degree of redistribution, and could also be linked to the structure of the welfare state (especially social democratic welfare states, Esping-Andersen 1990). Therefore, this partisan approach suggests that left power is a necessary condition for expanding welfare in general, and that left-labour power is one of the largest determinants of increased welfare spending in the era of globalisation (Garrett 1998). Furthermore, Huber and Stephens (2001:35) suggest that "the long term pattern of partisan governance is the single most important determinant of social policy differences across countries". Therefore, left party power can be considered as an important contributor to the welfare state and is important to include in primary studies.

Primary focus

The focus of the thesis is globalisations effect on the welfare state. Some of the studies included have included other dependent variables than just a measure of the welfare state. Therefore the primary focus of a study can be considered as a difference. Some of the studies have globalisation`s effect on the welfare state as their point of departure, while other studies have taken other effects into account (e.g. tax competition, democracy etc.) and include a globalisation welfare-state regression as a part of its sensitivity analysis. Notice for instance the difference between Bretschger and Hettich (2002) Brady and Lee (2014), and Avelino, et al. (2005), where the latter is an example of a primary focus study, whereas the former are not-primary focus study.

Countries

Country focus might also be of importance. Most of the research presented focus on OECD countries. Some studies, however, have investigates other regions such as Latin-America.

Avelino, et al. (2005:627) suggest that when studying Latin American countries[11] some other factors also must be taken into account: Since many of the countries have been authoritarian, democracy must be taken into account. Furthermore, labour unions in these countries are weaker vis-à-vis those in the OECD in addition to an absence of long standing social democratic partisanship compared to some of the OECD countries.

Political scientist or economist[12]

Given the scope of the field, the relationship between globalisation and the welfare state engages political scientists, economists, and also sociologists and other scholars (Øverbye 2010) since the area can be regarded as influential for politics, the economy and social structures.

Adam et al (2013:208) suggests that there is a discipline bias between political scientists and economist. Political scientists tend to favour the importance of the political procedures, whereas economists tend to favour explanations based on market driving forces. Therefore authors from different disciplines can produce different results on the outcome, due to scholarly focus and theoretical considerations.

Time

Kittel and Winner (2005:284) Suggest that time both in regard to when the study is published and in finding support for one of the hypothesis is of importance. Goldfarb (1995) further suggest that there is a tendency for an expected pattern in empirical research. First, a new theory or hypothesis is confirmed, and then further research "confirms" this theory or hypothesis. At some stage however, contradictions emerge, and a rejection of the theory or hypothesis emerges. Since globalisation is a phenomenon that develops over time, the impact of globalisation can be argued to have different influence in different time periods. Therefore, time can be considered as an important explanatory variable

[11] These suggestions might also apply for other countries as well.
[12] In their review of the socio-economics for economic research Stanley, et al. (2008) suggest that differences in authors socio-economic status are important. For example gender, nationality, funding etc. can influence the result. In the globalisation-welfare state research these factors are not of great importance. Therefore, the political versus economist argument is included instead.

Type of estimation technique

More technically, the estimation techniques used in the studies can also be of importance. Most of the studies presented rely on time-series-panel data analysis. However, some of the studies rely on cross-sectional analysis. The cross-sectional studies are basically the older studies, i.e. those published before 2000. This is mainly due to data limitation at the time published. On the other hand, all the studies published after 2000 use time-series-panel data (although some of the more recent studies includes as combination of both, for example Busemeyer 2009)

In political science it is a debate on whether to include models with fixed effects and a lagged dependent variable[13]. In the globalisation-welfare state specially, this debate has also been pronounced. By reassessing the study by Garrett and Mitchell (2001), Kittel and Winner (2005) suggest that implementing the "de facto Beck and Katz standard" (cf. Plumper, et al. 2005), will estimate misleading results. Hence statistical estimation technique can also be seen as important.

Summary of Previous Studies on the Field

In this section a sample of empirical studies have been examined to show the variety, and lack of consensus on the effect of globalisation on the welfare state. Most of the studies are focused on advanced capitalist states in the OECD, although some studies have focused on Latin American countries. Further, most of the studies applies time-series analysis from the 1960 and onwards, using the "standard" measure of the welfare state, i.e. total government expenditures of GDP devoted to welfare. More recent studies have started to use other measures of welfare, the CWEDS, as well as applying the KOF index of globalisation in order to better capture the multifaceted phenomena, however, these developments have still not been able to draw firm conclusion. Furthermore, the empirical studies presented in this section are highly heterogeneous, which additionally motivates the use of a meta-analysis.

[13] See for example the discussion between Green, et al. (2001) and Beck and Katz (2001)

In order to summarise the previous research, a meta-analysis is a helpful and suitable tool. In the next section the methodology for conducting a meta-analysis is presented.

Chapter Three: Method

This thesis takes a quantitative approach to answer the research questions presented in the introduction. First, this chapter will discuss the feasibility of applying a meta-analysis to an inconclusive literature. Then, a five stage model on how to conduct a meta-analysis follows. This model describes how to search the literature, choose the measure for the dependent variable, the selection of the independent variables (moderator variables), how to investigate publication bias through a funnel plot, and finally, how to conduct more rigorous tests for both publication bias and heterogeneity through MRAs. A meta-analysis can be defined as:

> A systematic approach towards summarising the findings of a collection of independently conducted studies on a specific research problem. In meta-analysis, statistical analyses are carried out on the published results of empirical studies on a specific research question (Hox 2010:205).

Meta-analysis Versus "Traditional" Literary Reviews

Given the inconclusive relationship of previous research, several options are available to investigate the relationship between globalisation and the welfare state. A common approach is to do a qualitative narrative literary review or vote counting. A narrative literature review "relies on a researcher's ability to digest the array of findings across studies and arrive at a pronouncement regarding the evidence for or against a hypothesis using some unknown and unknowable (that is, subjective) mental calculus" (Wilson 2001:73). Further, Stanley and Jarrell 1989:300) argues that a narrative review "impressionistically chooses which studies to include, what weights to attach to the results, and which factors that are responsible for the differences". There are several limitations and problems with such reviews. (Stanley 2001, Stanley and Jarrell 1989, Stanley and Jarrell 2005, Stanley and Doucouliagos 2012, Wilson 2001, Hedges and Olkin 1985, and Hunter and Schmidt 2004). First, methodological selection bias often occur. That implies that researchers might omit studies that are not in line with their preferred hypothesis. Furthermore, this problem can be linked to subjectivity which inevitably is an issue in narrative reviews. Secondly, these options can do nothing to detect or control for publication bias, which is to be regarded as the "rule" in most empirical research areas (Stanley, et al. 2008). Vote counting is another option when doing literary reviews. Vote counting is a form of quantitative literary review. "in its simplest form, it consists merely of a tabulation of significant and nonsignificant results" (Hunter and Schmidt 2004:446). When

doing vote counting, each study is given a vote based on that study's significance level. Thus, a conclusion reached by vote counting will only rely on the number of significant results supporting or rejecting a given hypothesis. Furthermore, vote counting cannot address the issue of publication bias. "Thus the traditional voting method is fatally flawed both statistically and logically" (Hunter and Schmidt 2004:447).

Given the available options for conducting a literature review, the meta-regression analysis method was chosen. "Armed with the results of a MRA, the reviewer is in a better position to identify trends and to make interferences about the literature." (Stanley and Jarell 1989:303). The motivation for applying meta-analysis is manifold. First a meta-analysis does not a priori judge studies based on study quality; hence it will be more "neutral" than a traditional review since the studies solely are based on a statistical measure of quality. Secondly, the issue of publication bias, a long know problem in science in general, can explicitly be addressed. Thirdly, one strives to be as inclusive as possible, and include all the studies related to the research question. All in the sense that the studies meet some criteria that are necessary to be able to do a meta-analysis. Fourthly, a meta-analysis can explain why there is variation across research, and thus reach conclusions about the research process itself, which is not available for any of the other research methods. Fifth, when doing a meta-analysis, one "uses essentially the same tools and statistical models as…the econometricians who produce empirical economic estimates" (Stanley and Doucouliagos 2012:7). Therefore the method itself creates no higher thresholds in regard to the viability compared to doing for example a time series panel data analysis of globalisations effect on the welfare state.

The meta-analysis method is of course not perfect, and has been met by some critique[14]. Stanley (2001:146-147) presents several limitations of meta-analysis. First, a discussion of which moderator variables that should be included exists. The moderator variables are variables that are coded to be able to address heterogeneity among studies. Some are vital to be able to carry out a meta-analysis, while other moderator variables are grounded in theory. According to Stanley (2008:147), the moderator variables can be examined statistically and compared.

The problem of publication bias is also likely to influence a meta-analysis. Given that publication bias exists, "this in turn leads to biased meta-analysis results" (Wolf 1986:14). However, with statistical methods at hand this problem can be addressed and the ability to

[14] For a lengthy critique of the application of meta-analysis in social science, see Stegenga (2011)

detect publication bias and even correct it is available. The method can also detect the "true" empirical effect beyond publication bias (Stanley 2005)

Some have argued that meta-analysis tries to compare "apples and oranges". In other words, the meta-analysis tries to make comparison across too dissimilar studies to be able to draw meaningful interference. However, this "problem" will be present in (almost) any study and review since most studies not are identical replications of each other, "so including studies that are diverse in methodology, measures, and sample within a meta-analysis has the advantage of improving the generalizability of the conclusion" (Card 2012:25). Further, methodological differences and other differences between studies should be included in the moderator variables that further reduce this problem (Rosenthal and DiMatteo 2001). Another similar critique is based on the common idea of "garbage in, garbage out". This implies that studies with poor quality are included in the meta-analysis alongside with studies of good quality. A central question is how to judge the quality of a study. One form of quality check would be to include only studies from highly ranked journals, since one subjectively expects that a study from a leading journal will have higher quality than a study published in a small regional journal (Stanley and Doucouliagos 2012:34) however, suggest that these quality checks inevitably are objective, and therefore they promote the use of statistical approaches to quality, "which is to use the estimates precision…which is available for all estimates included in the meta-data" (Stanley and Doucouliagos 2012:34). All of these presented problems are also present in narrative reviews. Furthermore, most of these problems can be handled through statistical modelling and the application of meta-regression analysis. Given the wide variation of outcome regarding globalisations effect on the welfare state and the chosen method is suitable to offer "an objective quantification of…research. No more objective, or comprehensive, or rigorous method exists to asses a research literature or to draw useful…interferences from research" (Stanley, et al. 2008:290).

Conducting the Meta-Analysis and Meta-Regression Analysis (MRA)

There are many ways to conduct a meta-analysis. This thesis largely follows the recommendations and approaches suggested by Stanley and his collaborators[15], and the thesis also follows the MAER-network`s guidelines for publishing meta-analysis (Stanley, et al.

[15] Stanley and Jarrell (1989), Stanley (2001) and Stanley and Doucouliagos (2012).

2013). For the more technical aspects, the suggestions of Hunter and Schmidt (2004) are utilised.

The thesis has a twofold objective. First: to establish if there is an effect of globalization on the welfare state. This is done through what Feld and Heckemeyer(2011) refer to as a "classical meta-analysis" or a "bare-bone meta-analysis" by Hunter and Schmidt (2004). The second objective is to investigate whether publication bias is present, and how this might affect the literature and to model heterogeneity. To be able to do this, more technical statistical methods are used, and it is therefore necessary to conduct MRAs.

There are basically five steps in the meta-regression analysis approach conducted here.

1. Search the relevant literature and selecting and coding of estimates

2. Summarizing research: choose moderator variables and obtain the effect size

3. Accommodating publication bias

4. MRA to test beyond publication bias and to model heterogeneity

5. Guiding research and policy

Recalling the definition of a meta-analysis from Hox, a meta-analysis is conducted in order to summarise and interpret previous research findings. The first steps, step 1-2, are carried out to do this. These steps are also of vital importance for the MRA that follows.

Searching the Literature and Coding of Studies

The search for literature started out by reading relevant overview articles and the studies presented within them. (Schulze and Ursprung 1999, Koster 2009, Gemmell, et al. 2008). The first step in a meta-analysis is to conduct a systematic search for the relevant literature. In order to do this, a specific coding scheme must be developed. "The goal of searching and retrieving the literature for a meta-analytic review is to obtain a representative, unbiased

collection of studies from which interferences can be made about a larger population of studies" (Card 2012:36).

Then as suggested by Stanley and Doucouliagos (2012) a simple search on Google Scholar for studies related to the research questions followed. Search words included "globalisation + welfare", "globalization+ welfare state, "welfare", "welfare state", "efficiency hypothesis", "compensation hypothesis", "government spending + globalisation/globalization", public expenditures + globalization", "welfare spending + globalisation/globalization", "social spending + globalization". These searches yield many results; therefore a more systematic search was essential to obtain studies that can be included. A more specialised search for econometric studies followed on ISI Web of Science. In order to bear out the simplest form of a meta-analysis, studies must contain what Stanley and Doucouliagos(2012:14) refer to as essential data, which is: "reported regression coefficients, sample size, standard errors and/or t-statistics (Stanley and Doucouliagos 2012:14). The search for studies was finalised in March 2014.

Thus to decide which studies to include, some eligibility criteria must be fulfilled. Given the scope of the research questions for this thesis this criteria implies (at least) one measure of welfare state and (at least) one measure of globalisation. That implies an interest in studies with welfare on the left hand side of the regression, and globalisation on the right hand side. Secondly, only econometric studies are included. This omits case studies and other forms of qualitative studies, notwithstanding their usefulness. Thirdly, the studies must report sufficient statistics from which an effect size can be calculated. Therefore, studies that only contain descriptive statistics are excluded from the analysis. For example the studies by Navarro, et al. (2004) and Kite (2002) are not included, since they only presents descriptive statistics and no effect size can be calculated.

Thus, this thesis is limited to quantitative research where regression coefficients are reported so an effect size can be calculated. In line with Doucouliagos, et al. (2005:325) this "selection bias is entirely dictated by the possibility of making meaningful comparison and is not influenced by the source or the outcome of the research".

As mentioned in the section on the motivation for using meta-analysis, a main point is that a meta-analysis does not a priori judge a study based on its quality, i.e. excludes studies written in an "unfamiliar" or not in a highly ranked journal. Following Stanley and Doucouliagos (2012:34) "each estimate`s precision (i.e. 1/S.E) is used as the indicator of quality. This is the

most statistically valid approach as it is derived directly from the study's estimate and does not rely on any additional judgement". Given this quality measure, the population of studies included in the thesis are collected both from highly ranked journals, and less highly ranked journals[16].

The population of studies, should be as inclusive as possible, nevertheless a strict standard for inclusion must apply. "A meta-analysis offers a systematic assessment of the evidence base, and, hence, it is replicable by independent researchers. (Costa-Font, et al. 2014:5). In order to account for the reliability of the thesis, the inclusion/exclusion coding protocol is included in the appendix

The initial data-set contains only studies written in English, although a search also was done in German journals[17]. Stanley and Doucouliagos (2012) note that exclusion of non-English studies might not be critical since most journals are written in English. In their survey of political science journals Giles and Garand 2007 find that all the "top 90" journals are written in English. Therefore this exclusion will not be problematic for the overall meta-data sample. Furthermore, a clear understanding of the studies are necessary, therefore a simple translation and inclusion of regression coefficients from articles in a foreign language[18] is not sufficient. (Stanley and Doucouliagos 2012:15). Furthermore, studies that are not published, i.e. working papers, are not included in this meta-analysis. Since the globalisation-welfare state literature is mature, and well established, "the exclusion of unpublished studies is unlikely to affect the results" (Stanley and Doucouliagos 2012:19). If studies are written by the same author and use the same dataset and time period these studies are excluded from the meta-dataset in order to try to avoid severe author dependency.

[16] For example, the study by Gizelis 2005, published in *International Interactions* is less highly ranked than the study by for example Kaufman and Segura-Ubiergo 2001 published in *World Politics* based to the impact factor of the journals (Journal Citation Report)
[17] The search for German studies resulted in either: studies that used descriptive statistics only; or studies that also are published in English, for example Jahn 2003 that also is published in English as Jahn 2006
[18] I.e not English

The Dependent Variables

In order to be able to summarise and interpret the studies in a meta-analysis a common metric must be calculated to be able to run the analysis, and to make meaningful comparisons across studies. This metric is in a meta-analysis called an effect size. The effect size can be obtained in many ways[19], and there are several options available when doing a meta-analysis. "The most commonly used effect sizes…are elasticities, partial correlation and t-statistics" (Stanley and Doucouliagos 2012:29), although other options also are available. The effect size is also the dependent variable in the MRA.

Elasticities are widely used as an effect size measures in economics. "Elasticity measure the percentage change in some economic phenomenon arising from a percentage increase in some stimulus" (Stanley and Doucouliagos 2012:26). Elasticities are often not reported directly and must therefore be calculated. Elasticities however, are not always possible to calculate, and their standard errors can be hard to derive. "In a log-log form the regression coefficient are elasticities and their standard errors can be used directly" (Stanley and Doucouliagos 2012:26). If the elasticites has to be calculated however, the standard error of the regression is not the standard error of the elasticity. Thus, "the number of estimates that can be included will tend to be smaller than if the partial correlation is used" (Stanley and Doucouliagos 2012:27).

Semi-elasticities "measure the percentage change in Y when X changes by one unit". (Stanley and Doucouliagos 2012:28). If the dependent variables in the studies used are expressed in logs, semi-elasticities are very useful. Furthermore, standard errors are directly derived from the regression output. A drawback of using semi-elasticities is that the studies must use the same dependent variable in order to be combined (Stanley and Doucouliagos 2012:28).

T-statistics are the third conventional effect size measure. T-statistics are comparable across studies and easily collected from reported regression coefficients. However, t-statistics can be hard to interpret, and it is necessary to "control for its predictable statistical power" (Stanley and Doucouliagos 2012:28).

This thesis will use partial correlation as the measure of effect size. Partial correlations are widely used as an effect size measure; see for example Abdullah, et al. (2013), Doucouliagos

[19] For calculations of and further descriptions of alternative effect size measures see Card (2012) chapter 5, Stanley and Doucouliagos (2012:22-29) and Hunter and Schmidt (2004) chapter 7

and Paldam (2013) and Costa-Font, et al. (2014) for other recent applications. As elasticities, partial correlations are often not reported directly in studies, and must therefore be calculated from reported coefficients. "The partial correlation is a measure of strength and direction of the association between two variables, holding other variables constant" (Stanley and Doucouliagos 2012:24).

The calculation of the partial correlation, *r*, is as follows:

$$r = \frac{t}{\sqrt{t^2 + df}} \qquad 1.1$$

Where *t* denotes the t-statistics and *df* the degrees of freedom of this t-statistics. "if t-statistics are not reported, they can be approximated from the reported levels of statistical significance, or from the reported regression coefficients and standard errors" (Doucouliagos and Ulubasoglu 2008b:3). The standard error of r is calculated by standard error, r $=\sqrt{(1 - r^2)/df}$, which also is necessary to calculate in order to do a MRA.

There are several advantages by applying partial correlations as a measure for effect size. First, it is a unitless measure, so the partial correlation from one study is directly comparable to a partial correlation from another. As noted above the partial correlation can be calculated from a large set of estimates, making it easier to obtain than other effect size measures. Since different journals and authors of books have different reporting standards, this approach is favourable, since it allows for the incorporation of a wide variety of studies, and thus making the meta-dataset as comprehensive as possible.

A disadvantage of using partial correlations as effect size is that they are not normal distributed when their values are close to ±1[20]. However, according to Stanley and

[20] Stanley and Doucouliagos (2012:25) notes that a normal remedy when this problem is present is to use Fisher's Z-transformation: $z = \frac{1}{2}\ln(\frac{1+r}{1-r})$. However, through research, they have found that the transformation makes little practical difference of the central findings.

Doucouliagos (2012:25) this might not be a problem since few of the values will be close to this limit. In order to interpret the value of the effect size Cohen (1988:79-80) developed the following guidelines: if the size of r is less than 0.1 the effect is small, medium if 0.3 and large if 0.5 or more. Another disadvantage of using the partial correlation is that it is a statistical measure of effect. Ideally, an effect size that can capture an economic effect would have been favourable, for example elasticity. These disadvantages set aside; the partial correlation was chosen since it enables for a wider and more comprehensive data-set.

Selection of Moderator (Meta-Independent) Variables [21] [22]

In a meta-analysis, the independent variables are called moderator variables. Stanley and Doucouliagos (2012) make a distinction between *essential* and *typical* variables. Essential variables are variables that are necessary to be able to do a MRA, while typical variables are variables that take different study characteristics into account. The moderator variables "are those study characteristics that are thought to be consequential" (Stanley 2001:137), and contains information on study specific choices made by authors on for example research design ,what kind of data used in regressions and characteristics of the author etc. The moderator variables are either coded as binary dummy variables if they are study characteristics, or as metric variables if they are essential variables (year published, effect size, degrees of freedom). The full list and justification for the moderator variables included in the thesis are presented in the part on data. These steps will make it possible to carry out a "classical meta-analysis" and lay out the framework for the more advanced meta-regression analyses.

Turning to Meta-regression Analysis (MRA)

Although the preliminary part spells out the step in conducting a classical meta-analysis, that is finding the effect of a phenomenon, a meta-analysis can do much more which are step 3-5 mentioned above. This is done through the application of MRA. MRA can be defined as: "a

[21] For a full list of the justification of moderator variables, see chapter 4.
[22] Following the MAER-network`s guidelines for publishing meta-analysis. Stanley, et al. (2013)

meta-analytic technique developed specially for economics research in series of research or presentations. More specially, a regression model may be used to explain differences among empirical estimates of some economic phenomenon" (Stanley and Jarrell (1998:953). According to Stanley and Doucouliagos (2012:38) "the main contribution of meta-analysis is to make interferences about the state of economic and business knowledge and to correct a literature for misspecifications and selection bias that typically plague the empirical studies". In order to be able to model the MRA the previous collected and calculated effect sizes are essential. Doucouliagos and Paldam (2013:585) note that MRA is conducted at two levels. The first level involves coding, effect size and tests for publication bias. The second level allows for testing for heterogeneity which can be used to "(i) identify factors that result in excess variation in reported estimates and (ii) adjust the meta-average for omitted variable bias".

Publication Bias[23]

A central topic while conducting a meta-analysis is the issue of publication bias. Publication bias is a long known phenomenon in science in general (see for example Begg and Berlin 1988). Publication bias occurs because "researchers, reviewers and editors treat 'statistically significant' results more favourably; hence, they are more likely to be published" (Stanley et al. 2008:279). Insignificant studies on the other hand, are less "likely to be published, since they might be thought to say little about the phenomenon in question" (Stanley et al. 2008:279). The consequences of publication bias, is thus that the literature reports larger effects than there really are (Stanley 2008:104), thus creating a false representation of reality. Publication bias should therefore be treated as a serious problem, since empirical effects may be larger than they really are. Thus "publication bias can distort both scientific interferences and policy decisions" (Doucouliagos, et al. 2005:321). Gerber and Malhotra (2008) found evidence of publication bias in leading political science journals, and in a meta-meta-analysis of 87 different areas of research in economics, Doucouliagos and Stanley (2013) also found substantial evidence of publication bias. Given the polarisation of the globalisation- welfare state literature discussed in chapter 2, there might not be any incentives to prefer one side of

[23] Hunter and Schmidt (2004) refer to this issue as availability bias, while Rosenthal (1979) calls it the file drawer problem. Stanley and Doucouliagos (2012) suggest that the problem more accurately should be called "selective reporting bias". This thesis will use publication bias as the term for the issue.

the debate over the other. Therefore, the globalisation-welfare state literature might serve as a special field where publication bias is not present. Other meta-analysis of inconclusive research areas have also found that publication bias is not present, for example Adam, et al. (2013) on globalisation and capital taxation and Haile and Pugh (2013) on exchange rates and international trade. However, since publication bias can mislead research and interference, it is important to test for the presence of publication bias.

Publication bias may arise due to many factors. According to Callot and Paldam (2010:5-6) there are different priors among researchers which can lead to censoring of the results, which in turn can lead to publication bias. These priors are labelled political, economic, theoretical and polishing priors. As long as these priors are not met, the research can be discarded. The first prior suggest that the finding is political or morally unpleasant. For example, in their meta-analysis approach to aid effectiveness Doucouliagos and Paldam (2008, 2009, 2011a), notes that "aid effectiveness is a field where many researchers (and perhaps journals) are reluctant to publish negative results" (Doucouliagos and Paldam 2009:435), since most researchers "wish to make a positive contribution to the laudable enterprise of development aid" (Stanley and Doucouliagos 2012:52). The second can occur if researchers work in a field where they have interests, for example through funded research. The third if theoretically the finding cannot be possible, and the fourth prior is related to the want of reaching "pleasant results", that is finding statistical significant results, and discard unclear and non-significant results. Polishing stems from researchers want of clarity and the general focus on finding statistical significant results in the academic world[24]. Eventually, the research has found a result generated by the "stopping rule". There are, according to Callot and Paldam (2011:7), three such stopping rules. The first that the research satisfies the researcher's priors, i.e. the researcher likes it, the second that the results are statistically satisfactory, and the third that the result is considered to be marketable on the market for research. Censoring of results will thus ultimately lead to publication bias. Polishing and censoring are related, but censoring might be considered more serious – censoring implies after all, discarding a finding because it is not considered as "right".

[24] For an elaboration on this issue particularly, see Brodeur, et al. (2013)

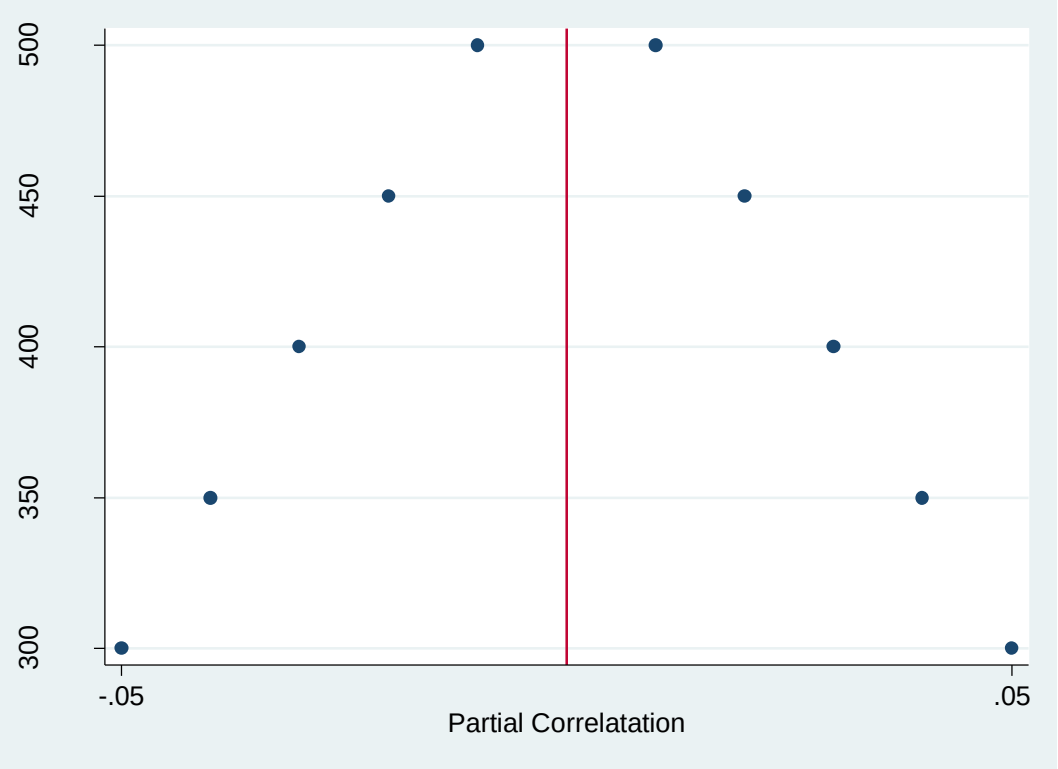
Given its potentially severe consequences it is prudent to investigate publication bias in any MRA. A recommended starting point for detecting publication bias is an inspection of a funnel plot. A funnel plot is a graph of precision versus effect size. The most common measure of precision is the inverse of the standard error (1/SE) (Stanley 2005:314). It should be noted that "SE is the standard error of the partial correlation and not the standard error of the regression coefficient" (Abdullah, et al. 2013:15).

"Asymmetry is the key to identifying publication bias" (Stanley 2008:107). If the funnel plot shows an asymmetric shape, this shape can be interpreted as a preliminary identification of publication bias. The more precise the estimates, the closer to the estimated "true" effect the points in the funnel plot are. Recall that precision is linked to the standard error of the estimate. When the sample is large, the standard error will be small, and the confidence in the estimate high. (Midtbø 2007:92). Therefore, studies with larger sample sizes will have smaller standard errors and therefore be more precise. Studies with less precise estimates, i.e. studies with larger standard errors, on the other hand, will have lower precision,

"In the absence of publication bias, estimates should be randomly and systematically distributed around the true population parameter" (Stanley and Doucouliagos 2012:60). The estimates at the bottom of the graph, have large standard errors, and will therefore be widely dispersed (Stanley and Doucouliagos 2012:55). The more precise estimates will be more compactly distributed around the true effect.

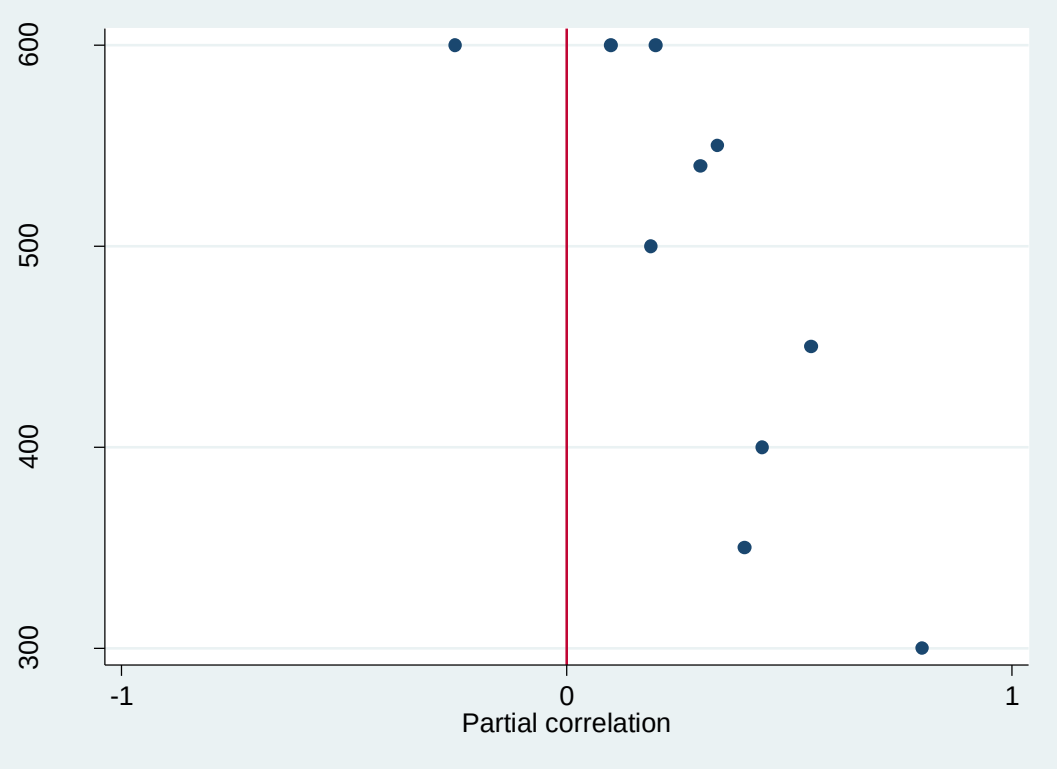
The solid line in figure 1 and 2 indicates a partial correlation of zero. It should be noted that this line could be anywhere; in the following two examples, the average effect size is set to be zero. "In the absence of publication bias, estimates should be randomly distributed around the true population parameter, whatever its value" (Stanley and Doucouliagos 2012:60), and it is not always constrained to be zero.

In the following two examples figure 1 shows a funnel plot with no publication bias and figure 2 shows a funnel plot with publication bias. It should be noted that the two figures use hypothetical values and are used for examples only. Note that the distribution of estimates are widely dispersed, and show no clear sign of publication bias, in other words, the shape of the graph looks like a funnel. "Heteroscedasticity dictates the expected inverted funnel shape. Studies with less precision and hence larger standard errors are at the bottom of the graph and will produce estimates that are more spread out" (Stanley 2008:107).



Notes: Hypothetical partial correlation and precision values. Used for example only.

Figure 1: No publication bias



Note: See Figure 1

Figure 2: Publication bias

Figure 1 displays a funnel plot with no publication bias. Estimates are spread both on the right and the left hand side of 0, the estimated "true" effect in this example, indicating that studies report both negative and positive results. The more precise estimates are closer to the true effect, while the less precise estimates are more spread out.

The asymmetry in figure 2 shows a clear example of publication bias. The overweight of estimates to the right suggest that positive results are reported more than negative result, resulting in a right-skewed distribution. This skewedness clearly suggests that publication bias is present in favour of positive results.

For real illustrations, see for example Doucouliagos, et al. (2005) for a funnel plot with no publication bias on union-productivity, and Rose and Stanley (2005) for a funnel graph with publication bias on common currencies and international trade.

Although a funnel plot is considered to be "the simplest and most commonly used method to detect publication bias" (Sutton, et al. 2000:1574), Stanley and Doucouliagos (2012:148) note that "interpretation of graphs is inevitably subjective and no substitute for rigorous statistical

analysis". Therefore statistical tests for publication bias are necessary to fully account for the problem, especially if the results of the funnel plot are not clear-cut and hard to interpret meaningfully. The next section deals with how to statistically test for publication bias with simple MRA.

Statistical Tests for Publication Bias and How to Correct it

There are many available ways to detect and identify publication bias. One formal statistical way for testing for a genuine empirical effect and correct publication bias is to use the funnel asymmetry testing, precision effect testing: the FAT-PET MRA[25]. Other options are also available, but these will not be discussed in length here. For thorough reviews of the available methods, see Stanley (2005) and Stanley (2008). One early contributor to addressing the issue of publication bias is Rosenthal (1979). Rosenthal (1979:638) suggests at the extreme that 95 percent of all studies with non-significant results are filed away in the drawer, hence the name the "file drawer problem". Therefore a "failsafe N" can be calculated. The failsafe N formula takes the original effect size as the point of departure, and calculates "the number of additional 'negative' studies (studies in which the intervention effect was zero) that would be needed to increase the P value for the meta-analysis" (Sterne, et al. 2011). However, this method is not considered to be the best in modern meta-analysis theory. (Stanley and Doucouliagos 2012, Hunter and Schmidt 2004), and is not widely used in modern MRAs.

Meta significance testing is based on statistical power and the "relationship between a study`s effect (its t-value) and its degrees of freedom as a means to identifying a genuine empirical effect" (Stanley 2005:328). When applying this approach a statistically significant relationship" between the log of the absolute effect size and the log of degrees of freedom indicates the existence of a true effect" (Haile and Pugh 2013:12)[26]. However, the meta

[25] Stanley and Doucouliagos(2012 :149) notes that there is a consensus on the use of FAT-PET-PEESE MRA as the best correction for publication bias.

[26] For application and calculation see for example Haile and Pugh 2013 and Stanley and Doucouliagos (2012:77-78)

significant test is not recommended to use, since it can find evidence of an empirical effect even though it does not exist Stanley and Doucouliagos (2012:77).

Trim and fill is another method to correct publication bias, but it is "not a method for determine whether it exists" (Hunter and Schmidt 2004:508). The trim and fill method takes a funnel plot as the point of departure, and it is based on an imputed correction of estimates by "trimming the excess reported studies on the "preferred" side of the funnel graph and filling in the missing, unreported studies on the other side" (Stanley and Doucouliagos 2012:74). Moreno, et al. (2009:15) note that there are other regression-based adjustments that performs better than the trim and fill method.

As recommended by Stanley and Doucouliagos[27] the FAT-PET MRA is the preferred option to controll and correct publication bias in this thesis. The FAT-PET MRA model consists of two parts: the FAT which tests for publication bias, and the PET test for a genuine empirical effect. The model can be expressed as follows using WLS with precision (1/SE) as weights:

$$t_i = \beta_1 + \beta_0(1/SE_i\ ) + v_i \qquad 1.2$$

Where t_i denotes the reported estimates of the t-value, and *SE* its standard errors. Publication bias is tested for the asymmetry of the funnel if H0: β_1 = 0, in other words, there are no publication bias if we can keep the null-hypothesis. If H0 :β_0= 0, this "serves as a test of whether or not there is genuine underlying empirical effect beyond the potential of distortion due to publication bias" (Stanley and Doucouliagos 2012:62). In order to interpret the result of the FAT-PET test, Doucouliagos and Stanley (2013:320-321) suggest the following guidelines:

[27] Through Monte Carlo simulations Stanley (2008) find that the FAT-PET MRAs are powerful and valid tests to account for publication bias.

1. If FAT is statistically insignificant or if $|\beta 0| < 1$, then selectivity is 'little to modest'.
2. If FAT is statistically significant and if $1 \leq |\beta 0| \leq 2$, then there is 'substantial' selectivity.
3. If FAT is statistically significant and if $|\beta 0| > 2$, then there is 'severe' selectivity.

If publication bias is present, the Precision-Effect Estimate with Standard Errors (PESSE) MRA is the preferred option by Stanley and Doucouliagos. The PESSE MRA provides a "better estimate of the underlying "true" effect when there is an effect. However this is not true when there is no empirical effect and only publication selection" (Stanley and Doucouliagos 2012:66).

The PESSE model takes the following form:

$$t_i = \beta_1 SE_i + \beta_0 (1/SE_i) + v_i \qquad 1.3$$

Where the standard errors from the partial correlations are included in both terms. It should be noted that the PESSE only should be used if publication bias is found when modelling the FAT-PET-MRA.

Modelling Heterogeneity

Heterogeneity is another pivotal issue MRA can address. Theoretically, the globalisation-welfare state literature allows for large heterogeneity across studies since a solid research base finds supports for all of the three hypotheses presented in chapter 2. Furthermore it is also methodologically plausible that heterogeneity will be present (Stanley and Doucouliagos 2012:80). Heterogeneity arises from the fact that the expected value of a reported estimate will often depend on many other factors. These other factors are related to how the primary research is done. Eventually, these different factors are reflected in the moderator variables in the MRA. To be able to address this issue, multiple MRA is applied. When conducting a multiple MRA there are several choices of effects to model. There is a debate in the literature whether to model the multiple MRA with *fixed* or *random effects,* and more recently if one should use *weighted least-square (WLS).* It should be noted that the terms *fixed* and *random*

are used differently in MRA than in panel-data analysis and "normal econometrics." In meta-analysis the difference between fixed and random effects models originate from the underlying assumption as regards the nature of the 'true' effects" (Mekasha and Tarp 2013:581). It should also be noted that MRA not should be estimated with OLS due to heteroscedasticity. Heteroscedasticity is an inevitable issue in meta-analysis since different studies use different estimation techniques, data sets, different sample sizes, and the variance of the estimated coefficients may not be equal (Stanley and Jarell 1989:304). Hence, MRA models should be modelled with WLS, using precision as weights. A *fixed* MRA is suitable if all the studies estimate a common effect "and that all estimates are drawn from the same population with the same mean" (Stanley and Doucouliagos 2012:46). Thus, the fixed effects model assume that the studies included in the meta-dataset are the whole population of studies (Hunter and Schmidt 2000:277), an assumption that could be regarded as too unrealistic. A *random* effects MRA can be useful if "study differences result from both sampling errors as well as random differences between studies"(Doucouliagos and Ulubasoglu 2008a:66). Further the random effects model assumes that the studies included are a sample of the whole population, and can therefore be argued to be more realistic than the assumption for the fixed effects model. The *random effects* model adds an additional term in order to account for unexplained heterogeneity. *Random effects models* however have been showed to be biased when publication bias is present due to the assumption that "these added random effects need to be independent of all of the explanatory variables. However, this is not likely to be true for MRA models of publication selection because imprecise studies require greater effort to find statistical significance" (Stanley and Doucouliagos 2012:82), and they therefore do "not recommend the use of random-effects MRAs" (Stanley and Doucouliagos 2012:83). Stanley and Doucouliagos (2012:83) show that when publication bias is present, the random effects model "increases the estimated effect in the same direction as the observed publication bias", thus suggesting that a random effects model can overestimate the effect. The *WLS-MRA* is suggested by Stanley and Doucouliagos (2012) to be a more appropriate estimation technique to use compared to *random effects.* Further research has also suggested that the WLS approach is more suitable than the fixed effects Stanley and Doucouliagos (2013a, 2013b). The *WLS-model* allows for "research dimensions that explain both the reported heterogeneity among results and ensuring that any simple MRA finding is robust to more comprehensive analysis. (Stanley and Doucouliagos 2012:150)[28]. Furthermore "WLS models are efficient if

[28] In a series of working papers, Stanley and Doucouliagos (2013a,b) further promotes the use of WLS meta-regression analysis

estimation models are heteroscedastic, and the nature of heteroscedasticity is known" (Feld and Heckemeyer 2011:244-245), which is the case in MRA. Therefore the WLS approach to estimating the MRA will be the preferred option of this thesis.

To accommodate robustness and the validity of the MRA models in use, a Hausman test can be used to find whether or not fixed or random effects are appropriate to be modelled, and a Breusch-Pagan Lagrange multiplier test can be used to decide if a multilevel model is necessary (Stanley and Doucouliagos 2012:104). In order to ensure further robustness, several alternative models need to be explored and reported (Stanley and Doucouliagos 2012:150). Further models should be estimated with robust standard errors due to the heteroscedastic nature of MRA. Dependency is another issue the when models consists of several estimates. In a meta-analysis dependence can take three forms: either through study dependency when more than one estimate is reported, through author dependency if an author publishes more than one study, or through spatial dependency if researchers are influenced by prior findings or receive direct feedback from each other (Stanley and Doucouliagos 2012:36). Stanley and Doucouliagos recommended two approaches to account for dependency among estimates and to correct MRA standard errors: either to use cluster robust standard errors or multilevel modelling. When clustering, dataset, author and the study are reasonable dimensions upon which to cluster (Stanley and Doucouliagos 2012:100). Stanley and Doucouliagos (2012:103-104) further recommend to rely on the results "that are consistent across the multiple WLS, FEML and cluster-robust MRAs along with the simple FAT-PET-PESSE-MRAs".

General-to-specific Modelling of the MRA

A general-to-specific (g-t-s) approach is advocated by Stanley and Doucouliagos (2012:90-91). G-t-S modelling starts off with first having a general model, which is a model that contains all the moderator variables. Then the least significant variables are systematically removed, one at the time until only the statistically significant variables are left. (Stanley and Doucouliagos 2012:90-91). The purpose of the g-t-s approach is to "minimise the potential of

identifying spurious research dimensions through data mining" (Stanley and Doucouliagos 2012:104).

Equation 1.5 expands the simple FAT-PET-PESSE equation 1.4 to be a multivariate model by adding moderator variables, Z and K, in order to explain and allowing for exploration of the heterogeneity in the reported results. The Z variables are study characteristics coded as dummy variables (primary, OECD, left etc.), while the K variables are related to publication bias and the effect (partial correlations, standard errors of partial correlations)

$$t_i = \beta_1 + \sum \delta_j K_{ji} + \beta_0 / SE_i + \sum \beta_k Z_{ki} / SE_i + u_i \qquad 1.4$$

This chapter describes the methodological approach of the thesis which offers a framework that broadly can investigate the direction of globalisation on the welfare state, publication bias and the heterogeneity in the studies used in this meta-analysis. First meta- analyses are compared to narrative reviews. Then a step-by step guide on how to conduct a meta-analysis follows. There are essentially two levels in a MRA. The first involves doing a thorough literature search for studies related to the research questions. To be able to compare different studies, an effect size (the dependent variable) must be calculated. The first level can also test for the presence of publication bias. This is first done by using a funnel plot, and then trough a statistical approach, the FAT-PET-MRA.

The second level relates to study heterogeneity. By applying regression analysis and moderator variables, this enables for a more rigorous exploration of how differences between studies generates variation. More specially, the section on heterogeneity also discuss the differences between fixed, random and WLS MRAs.

In the section that follows, the meta-dataset and the moderator variables are presented in a more rigorous manner. These variables lay the foundation for the application of the MRA that follows in chapter 5.

Chapter Four: Data and the Meta-Data Set

This chapter presents the data used in the created meta-dataset. Table 1 shows the population of studies included in this meta-analysis. Following the search scheme presented in step 1 on how to conduct a meta-analysis 33 studies are included. There are of course, more than 33 studies that investigate globalisations effect on the welfare state, but the 33 studies met the search criteria. In their meta-meta-analysis, Doucouliagos and Stanley (2013) "found that the average number of studies included was 41 with the median being 35" (Stanley and Doucouliagos 2012:20). The 33 studies in this analysis provides a total of 417 partial correlations of globalisations effect on the welfare state are available, that is, 417 estimates that investigates globalisation on welfare state from primary studies are available. Moreover descriptive statistics for the dependent and independent variables are included.

Table 1: Papers on globalisations effect on the welfare state included in the meta-analysis. References, numbers of estimates and descriptive statistics.

Author(s)	No. of estimates	Mean. p.c	Median. p.c	Standard deviation	Min. p.c	Max. p.c
Avelino, et al. (2005)	15	.0351614	.0730782	.1480156	-.3496709	.285325
Brady and Lee (2014)	15	.0128017	.049355	.0976865	-.155838	.1165628
Brady, et al. (2005)	12	.0300406	.0665109	.0987616	-.1182129	.1561558
Bretschger and Hettich (2002)	2	.2870077	.2870077	.0165624	.2752963	.2987191
Burgoon (2001)	28	-.0406157	-.0311772	.0793832	-.174872	.0978742
Busemeyer (2009)	40	.2795136	.1460689	.2328942	.0255255	.8338886
Dreher (2006)	12	.0779758	.0641445	.0563223	.0051214	.1849665

Dreher, et al. (2008)	39	.040768	.036834	.039545	0	.1754338
Garrett (1998)	2	.0014372	.0014372	.0002385	.0012686	.0016059
Garrett (2001)	12	.0419826	.006445	.1490485	-.219706	.3796632
Garrett (1995)	2	-.0640028	-.0640028	.0468041	-.0970983	-.0309073
Gemmell, et al. (2008)	12	.0615731	.0264347	.0948132	.0010706	.3415018
Gizelis (2005)	2	.1097308	.1097308	.0578316	.0688377	.1506239
Ha (2008)	24	.0049354	-.0093297	.0592751	-.0581853	.13145
Huber, et al. (2008)	12	-.0279695	-.0266542	.0411324	-.125414	.0236956
Iversen and Cusack (2000)	8	-.0206519	-.0310212	.0606798	-.0927324	.0936205
Jahn (2006)	24	-.045216	-.0552383	.1099489	-.2511988	.2100381
Jensen (2011a)	14	-.053128	-.0860197	.1178074	-.2078565	.1211548
Jensen (2011b)	2	.0060634	.0060634	.1183759	-.077641	.0897678
Jensen (2011c)	10	-.0640103	-.0486702	.0630719	-.1646342	.044676
Jensen, et al. (2014)	12	-.0193858	-.0223035	.0474903	-.0766354	.0423249
Kaufman	30	.1258402	.1238629	.0891925	.0005944	.287516

and Segura-Ubiergo (2001)						
Kittel and Obinger (2003)	10	.2030749	.1473768	.1217396	.0509273	.4048377
Kwon and Pontusson (2010)	8	-.0913351	-.0744373	.1387056	-.3041893	.1137908
Potrafke (2009)	3	.0186026	.0065704	.0216583	.0056318	.0436055
Rickard (2012)	20	-.0943149	-.0468713	.2124149	-.8613665	.1016022
Rodrik (1997)	6	-.0419213	-.0880697	.1482274	-.1877309	.1619174
Rodrik (1998)	6	.0032923	.0019726	.003614	.0003665	.0101347
Rudra (2002)	7	-.0129719	.0085865	.0971132	-.1952883	.0805758
Rudra and Haggard (2005)	10	.0583396	.0532524	.0377078	.0102054	.1255985
Swank (2001)	5	.0531855	.059071	.070241	-.0347655	.1478599
Swank (2005)	8	.0011658	.0280101	.1130097	-.2387511	.1274126
Swank (2002)	5	.0499535	.059071	.0754764	-.0509257	.1478599
Total	417	.0396128	.0272335	.1543157	-.8613665	.8338886

Note: p.c= partial correlation.

Table 1 lists the studies included in the meta-analysis with descriptive statistics. The search for studies resulted in a total of 35 studies, where 33 of these studies had sufficient information in order to calculate a corresponding effect size. Due to missing information on t-values, s.e or p-values some of the studies that initially were included are not included in the data-set since the corresponding partial correlations unfortunately could not be calculated.

Following Feld and Heckemeyer (2011:238) the meta-dataset contains a total of 417 numbers of observations: that is partial correlations of globalisation's effect on the welfare state.

The number of estimates per study varies considerably, ranging from 2 to 40. This great span shows that there certainly is heterogeneity across studies. For example the study by Busemeyer (2009) contributes to 40 of the partial correlations, while the studies by among other Garrett (1995) only reports 2 coefficients. Moreover, table 1 also shows that there are both reported positive and negative partial correlation values, and that all studies have at least one positive coefficient. The average study contains 11 coefficients (with a median of 10). The minimum partial correlation is -0.86, while the maximum partial correlation is 0.83. The mean partial correlation of the overall meta-sample is ≈0.04 with a standard deviation of 0.15. This suggests that the average study will find a small, positive effect of globalisation on the welfare state. The 417 partial correlations derived from the 33 studies are used as the dependent variables in the MRA.

Moderator Variables

Table 2: Meta-regression variables definitions: Welfare States and Globalisation Studies.

	Variable	Type	Description	Mean	SD	Min	Max
Essential data	Studyid		Identifying number of the study			1	33
	Partial correlation		Effect size measure calculated as: $r = \frac{t}{\sqrt{r^2 + df}}$	.0400757	.1540104	-.861366	.8338886
	sePartiall		Standard error of partial correlation calculated by s.e $\sqrt{(1 - r^2)/df}$	.0648597	.0366816	.0312338	.2354243
	yrpublished		Year the study is published	2005.593	4.530464	1992	2014
	nocontries		Numbers of countries in the study	24.0461	17.4988	5	116
	noyears		Numbers of years in the study	22.33978	9.037317	1	40
Typical data	globindicator		Numbers of globalisation variables in the study	2.683857	1.419308	1	6
	oecd	BD	1 if OECD country, 0 if otherwise	.9438669	.2304181	0	1

latam	BD	1 if Latin American countries are present, 0 if otherwise	.1975052	.3985312	0	1
left	BD	1 if a left variable is included; 0 if otherwise	.3388773	.4738209	0	1
socxgdp	BD	1 if OECDs social expenditures are used as the dependent variable; 0 if otherwise.	.2889813	.4537611	0	1
xs	BD	1 if cross-sectional data is used; o if otherwise	.1247401	.330768	0	1
tspd	BD	1 if time series panel data is used; 0 if otherwise	.8877339	.3160222	0	1
kof	BD	1 if the KOF index of globalisation is used; 0 if otherwise	.1621622	.3689833	0	1
scruggs	BD	1 if Scruggs welfare state data is used; 0 if	.049896	.2179569	0	1

		otherwise				
political	BD	1 if the author of the study is a political scientist; 0 if otherwise	.7733888	.4190748	0	1
beckkatz	BD	1 if Beck and Katz's de facto standard is used; 0 if otherwise.	.1101871	.3134488	0	1
primary	BD	1 if globalisation`s effect on the welfare state is the study's primary focus; 0 if otherwise	.1372141	.3444315	0	1
socxpart	BD	1 if parts of social expenditures are used as the dependent variable; 0 If otherwise.	.2141372	.4106496	0	1

Notes: Following the distinction made by Stanley and Doucouliagos (2012) between essential and typical data. Essential data refers to data that are essential to carry out a meta-regression analysis, while typical data refers to spesific study charactheristics of each study. BD = binary dummy

Table 2 provides an overview of the chosen moderator variables for the meta-regression. The essential variables are either collected from the studies or calculated with corresponding

formulas. Most of the essential data variables, the Z variables in equation 1.5, are continuous (standard error of partial correlation, partial correlation, number of years, year published). The typical data variables, the K variables in equation 1.5, are study characteristics that are assumed to have an effect on the welfare state. The insight from the literary review in chapter 2 helps to identify characteristics assumed by theory to be crucial in explaining the effect of globalisation on the welfare state.

The operationalization of the variables are mostly self-explanatory and described both in table 2 and in chapter 2. The political variable is coded based either on the authors education, (e.g. education in political science is coded as 1 whereas an education in economics is coded as 0) or his/hers affiliation with a specific department.

The beckkatz variable is related to the estimation technique. If the author relies on a model that includes a fixed effects model with a lagged dependent variable, the study is coded as 1, whereas other estimation techniques (for example Prais-Winston) are coded as 0.

The typical variables are coded as binary dummy variables which has the value of 1 if the characteristic is present; 0 if otherwise. There are some interesting findings in Table 2.Table 2 suggest that the average study is published in 2005 and contains observations of 24 countries over 22 years. Most of the studies rely on time-series-panel data, and investigates OECD countries. Furthermore, the largest numbers of countries included in a study is 116, while the smallest is 5. Most of the studies however, contain countries from the OECD. A total of 93 percent of the studies have included OECD countries, while only 6 percent look at Latin-American countries (or other countries respectively). It should be noted that some of the studies contains both OECD and other countries as well. . Moreover, six studies have more than 30 countries included in the sample. "Since a meta-analysis quickly can exhaust the degrees of freedom available, it will often be necessary to omit some potential MRA variables" (Stanley and Doucouliagos 2012:130). By coding the moderator variables broad however, the problem of omitted important variables will be reduced. Given the theoretical considerations and the degrees of freedom available, the moderator variables emphasised here are sensible to include.

Data Set

There is a discussion in the literature whether to include all study estimates or only one. Following Feld and Heckemeyer (2011:238) "multiple sampling allows for more powerful tests and more accurate estimates due to a larger underlying sample as compared to single estimate sampling". Moreover, they suggest that "single sampling greatly reduces the degrees of freedom available to the regression analysis, hampering the ability to identify which research dimensions are responsible for the large variation among the reported results" (Feld and Heckemeyer 2011:266). Stanley and Doucouliagos (2012:68) supplement this statement with the argument that "some of the multiple estimates may be essential in statistically identifying the effect of a specific important research dimension."

There is also a distinction in the meta-analysis between the *all-set* estimates and the *best-set* estimates. The all-set estimates contain all regression estimates from the globalisation-welfare state literature. That is; all estimates of a study with the welfare state and globalisation, whereas the best-set contains a key regression that is either identified by the author as the preferred model. If the best model is not stated explicitly by the author, Doucouliagos and Ulubasoglu (2008a:67) suggest using estimates with larger groups of countries.

This thesis will rely on the approach advocated by Feld and Heckemeyer (2011) and Stanley and Doucouliagos (2012). Therefore as the current consensus suggest "all the reported estimates are used in an effort to maximise the information available for MRA" (Stanley and Doucouliagos 2012:163)

Missing Data

Since different journals (and authors of books) have different reporting standards, the problem of missing data in the data-set might occur. As long as t-statistics, regression coefficients, standard errors or t-values are reported, the effect size is easy to calculate. T-values are calculated by dividing the coefficient on the corresponding standard error t=b/se

If p-values and degrees of freedom are reported, the calculation of t-statistics is also possible. The problem is when statistical significance only is specified with stars, usually denoting significance on the 1, 5 or 10 percent level. Thus, a choice has to be made on how to handle this problem which in turn will "introduce some measurement error into the meta data"

(Stanley and Doucouliagos 2012:31). There are several approaches available. Greenberg, et al. (2003:33-35) suggest to use the midpoint of the possible statistical significance range, i.e. at 10 percent, the p value is 0.075, at 5 percent 0.03 and 1 percent 0.005. To accommodate potential sensitivity, the model can be regressed with and without the imputed p-values.

Chapter Five: Analysis

In order to answer the research questions presented in the introduction chapter, the methodological approach and the data presented in chapter 3 and 4 are now put to a test. First, a classical meta-analysis is presented. Then a graphical presentation of the partial correlations and an investigation of publication bias though a funnel plot is presented. Then a FAT-PET-MRA to statistically investigate publication bias follows. In order to answer the question on heterogeneity and differences between studies a multiple MRA is used and six models are presented. All regressions are carried out using Stata 13 with some of the user written MRA options that are available[29]. The general Stata procedures follow Paldam (2013) and Stanley (2013).

The Classical Meta-analysis

The Classical meta-analysis is basically a pooling of the estimates using either fixed or random effects. The pooled effect says something about the overall effect of the partial correlation. As the table show, the pooled effect of globalisation on the welfare state is between 0.03 and 0.028 with 95 percent confidence intervals. The classical meta-analysis also calculates Cochran`s Q-test and the I^2 statistic to quantify study heterogeneity. The Q-test is significant (p=0.000), suggesting the presence of heterogeneity between studies. The I^2 statistic "is the percentage of variation attributable to heterogeneity" (Harris, et al. 2009:44). For the sample I^2 =77.7% which can be interpreted as high heterogeneity. This pooled effect size suggests that globalisation have a positive effect on the welfare state both in the fixed and random effects models. In other words, globalisation increases welfare spending. In line with Cohen`s guidelines, the effect is considered as very small since the pooled effect is less than 0.1. *Ceteris paribus* an increase of globalisation will thus increase the partial correlation by +0.03 in the fixed effects model and +0.028 in the random effects model, which translate to an increase in welfare. However, these averages are according to Stanley and Doucouliagos (2012:47) "premature. Therefore meta-analyst should refrain from drawing any interference from these averages". Further they suggest that "when there is important heterogeneity, any measure of average effect size will not capture the true nature of the …phenomenon in

[29] For a general overview of the available meta-analysis options in Stata, see Sterne (2009)

question" (Stanley and Doucouliagos 2012:48).Thus, more advanced methods are crucial to further investigate publication bias and heterogeneity.

Table 3: Classical Meta-Analysis

Estimation	Pooled effect	CI 95
Fixed effects	0.029	0.024 - 0.034
Random effects	0.028	0.016 - 0.039

Notes: CI= Confidence intervals. The metan command in Stata is used to produce fixed and random effects estimates.

Graphical Inspections

To visualise the variation in the dependent variables, some graphical inspections are useful to describe the data used. First, a histogram of the distribution of the partial correlation is presented and then the funnel plot follows.

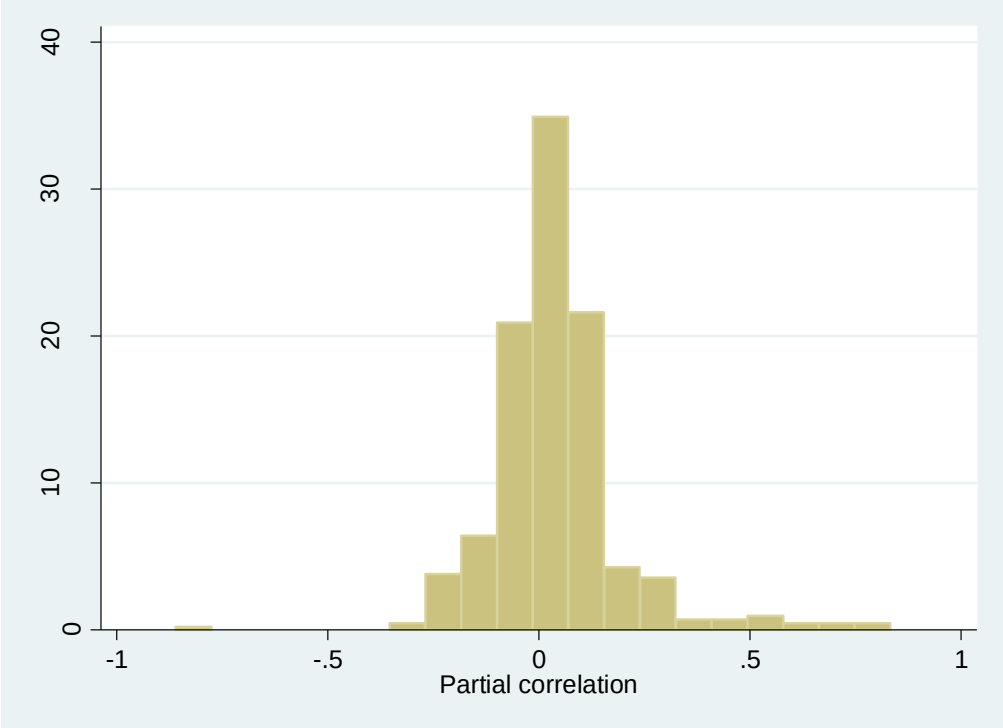
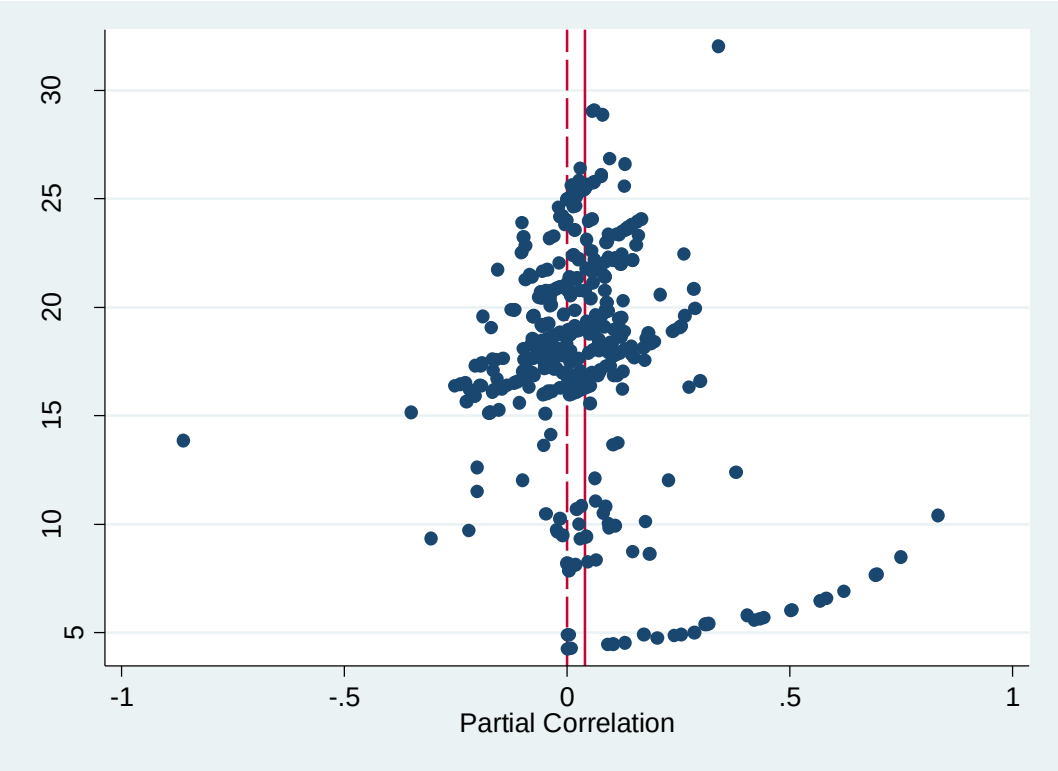


Figure 3: Distribution of the partial correlation

Figure 3 displays a histogram of the percentage of the partial correlations in the meta-data. Roughly 35 percent of the reported partial correlations have a value in the range of 0-0.1.

Funnel Plot



Notes: The dashed line indicates a partial correlation of 0. The solid line indicates the average partial correlation =0.04 for the whole sample.

Figure 4: Funnel plot of globalisation-welfare state partial correlations (n=417)

Figure 4 displays the funnel plot for 417 partial correlations and the chosen measure for precision (1/SE). The plot appears to be symmetrical, i.e. both positive and negative partial correlation coefficients are present, suggesting that there is no publication bias. Most of the values cluster around precision values of 15-25 with relative small partial correlations of 0.25-0.30. With larger partial correlations there is a tendency for less precision of the estimates.

Funnel plots are also useful in "double checking the accuracy of the meta-data" (Stanley and Doucouliagos 2012:40), and to detect outliers and leverage points. Some outliers can be detected. There are two types of outliers, according to Stanley and Doucouliagos (2012:41):

effect sizes with low precision but large values of the estimates, or large effect sizes with high precision which also are known as leverage points. Furthermore Stanley and Doucouliagos (2012:42) suggest that large effect sizes can be retained with little or no harm on the results, since precision is used as weights later in the statistical analysis. Some partial correlation estimates are close to ±1, no values are too close.

Leverage points with high precision however, can be considered as coding errors. After double checking the data set, some values were recoded due to errors. One value from Gemmell, et al. (2008) has a precision value =32.01. This is not a coding error, and can therefore be regarded as an influential point. This is taken into account when using robust regression. Busemeyers (2009) cross sectional study are the values with relative large partial correlations and low precision on the right hand side of the graph. This indicates exactly what theory predicts. Less precise estimates will be more spread out towards the bottom of the funnel plot due to larger standard errors[30]. The study by Rickard (2012) has the largest partial correlation of -0.86 on the left hand side. Although these estimates are relatively large, they are coded correctly.

In line with the theoretical literature the results are as expected since it reports both negative and positive results for globalisation's effect on the welfare state, since the debate largely can be divided in two schools, either an increase in welfare or a reduction of welfare it is not a surprise that the funnel plot have the expected shape.

The funnel plot also shows that heterogeneity is present which also is in line with the expectations since the different studies have a wide variety of methodological and theoretical variables. Although the funnel plot shows no critical sign of publication bias, more formal statistical tests are essential to address the issue, since the interpretation of graphs are subjective and since statistical tests for publication bias are considered "best practice" in a meta-analysis. In the following section, the simple bivariate FAT-PET-MRA follows.

[30] Generally, this observation also applies to the other studies when the cross-sectional approach is used: e.g Rodrik (1998) Kittel and Orbinger (2003)

FAT-PET-MRA Analysis

Table 4: FAT-PET-MRA

VARIABLES	(1) WLS Robust Partial correlation	(2) WLS Cluster robust Partial correlation	(3) Robust regression tstat
sePartial	0.09	0.09	
	(0.21)	(0.09)	
prec			0.02
			(0.99)
Constant	0.02	0.02	0.17
	(1.09)	(0.59)	(0.50)
N	414	414	414
R^2	0.00	0.00	0.00
Adjusted R^2	-0.00229	-0.00229	-3.53e-05
Standard error of regression	0.112	0.112	1.930

Notes: The dependent variables are the partial correlations between globalisation and welfare state. The variable sePartial is the standard error of the partial correlation and tstat =partial correlation/se of partial correlation. Prec = (1/S.E). Numbers in parentheses are t-values. Model 1 reports results using robust standard errors. Model 2 reports robust standard errors clustered by studyid. Model 3 reports robust regression. Model 1 and 2 uses WLS with precision squared as weights (aweights in Stata 13).Model 3 use the Rreg command in Stata 13 for robust regression. N is the number of observations. A fixed and random effects FAT-PET-MRA was also conducted. This was also insignificant.

The estimation of equation 1.4 is presented in table 2. As noted earlier, the FAT-PET-MRA will statistically identify publication bias and a genuine empirical effect if present. Further, the FAT-PET-PESSE MRA can also be used to correct publication bias if the FAT-PET identifies publication bias.

Model 1 in table 2 use WLS with robust standard errors, and precision squared is used as weights. Robust standard errors are used to accommodate the inherent heteroscedasticity in the meta-dataset. In model 2 the standard errors are clustered by studyid which "should be used whenever multiple estimates are coded per study" (Stanley and Doucouliagos 2012:71), due to author dependency. Model 3 is a robust regression "which corrects for the effects of influential outliers" (Doucouliagos and Paldam 2011b:7). Given the relatively large span of the partial correlations extracted from the studies, some weighting procedure is necessary.

The WLS approach offered here gives "little weight to coefficients with large standard errors, while precise estimates are given a much larger weight" (Stanley and Doucouliagos 2012:101)

First, notice that all the coefficients in all models are statistical insignificant Further there is also great robustness across the models. In model 1 and 2 the SePartial-coefficient is the test for publication bias, the FAT-term (β1), while the constant tests for a genuine empirical effect, the PET-term (β 0). Both the sePartial coefficient and the constant are in these models insignificant and the null hypothesis of β1 and β0 cannot be rejected. When using robust regression in model 3, the precision variable prec, the PET, is also insignificant in addition to the constant, the FAT-term.

In all models the FAT-PET MRA cannot reject the null hypothesis of β1 and β0, i.e. there is no publication bias and no genuine empirical effect. Since no of the estimates are close any level of statistical significance, it is neither necessary nor recommended (Stanley and Doucouliagos 2012:120) to regress the PESSE model. In line with Doucouliagos and Stanley's (2013) guidelines for publication bias, this results can be interpreted as 'little to modest' publication bias.

A genuine empirical effect beyond publication bias can neither be found due to the non-significant result of the constant in model 1 and 2 and the prec variable in model 3. The PET effect is also very small according to Cohen's (1988) guidelines, 0.02- suggesting a negligible effect of globalisation on the welfare state.

To summarise the findings: The FAT-PET MRA indicates that there is no publication bias in the globalisation- welfare state literature and also that there is no genuine empirical effect: *The null hypothesis of β1 and β0 cannot be rejected.*

This finding also is consistent and as expected based on the graphical inspection of the funnel plot and the theoretical literature. Since both the funnel plot and the FAT-PET-MRA show no sign of publication bias, the preliminary conclusion is therefore that there is no publication bias in the welfare-globalisation literature. Furthermore, the FAT-PET MRA does not provide evidence of a significant genuine empirical effect beyond publication bias. It should be noted that there are some limitations to the FAT-PET-MRA. First, the FAT is according Egger, et al. (1997) and Stanley (2008) known to have low power. The PET on the other hand can

identify effects that are not there due to much excess unexplained heterogeneity (Stanley and Doucouliagos 2012:64).

Given the limitations of the simple FAT-PET-MRA, Stanley and Doucouliagos suggest that the FAT-PET-MRA alone should not be relied upon (Stanley and Doucouliagos 2012:65). Therefore, it is important to use multiple MRA to explain heterogeneity. The funnel plot and Cochran`s Q Test does reveal much heterogeneity across studies. In order to address this issue and to further assess the robustness of the simple FAT-PET MRA, moderator variables are included in the multiple MRA that follows.

Multiple Meta Regression Analysis

The second step in the meta-analysis will be to include the moderator variables in order to address the high heterogeneity found in the preliminary analyses. In order to explain this heterogeneity, the moderator variables from table 2 are regressed using equation 1.5 where k= 1,…17 moderator variables. All the moderator variables are explained in table 2.

As noted earlier, some weighting procedure must be applied in MRA due to the inherent heteroscedasticity. Following Stanley and Doucouliagos (2012) WLS is the preferred option, and precision squared are used as weights. In order to account for author dependency, robust standard errors clustered by studyid, as in the FAT-PET MRA, are included. All the regressions use the full meta-data sample. Table 4 and 5 reports the results of the multiple MRA models.

Model 1 is a general model, using WLS with precision squared as weights and robust standard errors. This model includes all the moderator variables.

Model 2 presents the results of the g-t-s approach. In the following model only variables that end up being statistically significant at the 10 percent level after testing "downwards" are included. In other words variables that are the least significant are removed one at the time, then re-estimated, until only significant variables, where p= <0.01, are left. The SePartial variable is also included here in order to capture potential publication bias interacted with the other variables.

In model 3 cluster robust standard errors are used in order to handle author dependency. This dependency is "especially acute when multiple estimates from the same study are coded" (Stanley and Doucouliagos 2012:68). Recall that the average study contains 11 estimates. The estimates are clustered by studyid. The coefficients should be the same as in model 1, "the only difference is that standard errors are computed in a manner to account for any potential dependence among the estimates within the specified cluster" (Stanley and Doucouliagos 2012:100).

In order to comply with "traditional" economic reporting, some further exploration of alternative models is included. These are a fixed and random effects model, and a multilevel mixed model. These models are reported only for the sake of robustness and to make comparison to the WLS models.

Model 4 is the general model with fixed effects with dummies for authors included. The author dummies are jointly statistically significant in a collective test (p value =0.0000). The model also includes precision squared as weights and robust standard errors.

Model 5 uses the metareg command in Stata in order to run a random effects regression model. Metareg "is a weighted regression that contains a random-effects component. Because the standard error, or precision is always one of the independent variables in [the] MRA model, a random effects model is likely to be invalid" (Stanley and Doucouliagos 2012:64), therefore, they caution against relying on the metareg-command. Although it is cautioned against using random effects in meta-analysis, this is done in order to ensure further robustness of the findings and to follow common econometric reporting standards.

In model 6, the xtmixed command in Stata is used to include a multilevel mixed effects model structured over studyid. The rationale for including a mixed effects model is that there are several estimates "nested" within studies. Therefore, a multilevel framework can be used to account for within-study dependency. (Stanley and Doucouliagos 2012:100)

The models using WLS are the preferred models, and all of these models do show consistency regardless of estimation procedure. Through simulations, Stanley and Doucouliagos (2013:14) show that "WLS-MRAs are not only superior to fixed-effects weighted averages; it also dominates random-effects meta-analysis". In choosing upon the final model the g-t-s model is preferred. However, relying on the WLS models that contains all the coded moderator variables is also a sensible approach (Stanley and Doucouliagos 2012:91).

Table 5: Multiple MRA

VARIABLES	(1) WLS Robust Partial correlation	(2) G-t-S Partial correlation	(3) WLS Cluster robust Partial correlation
sePartial	-0.90	0.03	-0.90
	(-1.52)	(0.10)	(-1.03)
socxcgdp	-0.04		-0.04
	(-1.58)		(-1.21)
scruggs	-0.03	-0.04	-0.03
	(-1.23)	(-2.18)	(-1.05)
socxpart	0.02	0.04	0.02
	(1.52)	(3.37)	(0.66)
Kof	-0.06	-0.03	-0.06
	(-2.42)	(-1.63)	(-1.88)
globindicator	-0.01		-0.01
	(-1.08)		(-0.56)
nocountries	-0.00		-0.00
	(-0.60)		(-0.32)
noyears	-0.00		-0.00
	(-1.43)		(-0.94)
yrpublished	-0.00		-0.00
	(-1.94)		(-1.63)
xs	0.12	0.13	0.12
	(4.11)	(9.14)	(3.13)
tspd	-0.18		-0.18
	(-1.69)		(-2.56)
beckkatz	0.06		0.06
	(2.37)		(2.17)
oecd	0.06		0.06
	(2.18)		(1.86)
latam	0.06		0.06
	(2.32)		(1.77)
primary	-0.04		-0.04
	(-0.94)		(-0.71)
left	0.04		0.04
	(1.51)		(1.10)
political	-0.08	-0.06	-0.08
	(-3.53)	(-3.79)	(-2.66)
Constant	10.28	0.06	10.28
	(1.99)	(1.92)	(1.67)
Observations	414	414	414
R^2	0.21	0.16	0.21
Adjusted R^2	0.177	0.149	0.177
Standard error of regression	0.102	0.104	0.102
F-test (H0: all coefficients = 0)	P=0.000	P=0.000	P=0.000

Notes: Dependent variable = partial correlation. Model 1, 2 and 3 are estimated with WLS with precision squared as weights. (aweight in Stata 13). Model 1 and 2 use robust standard errors Model 3 use cluster robust standard errors clustered by studyid. WLS= Weighted least square, g-t-s = general to specific. The Numbers in parentheses are t-statistics.

Table 6: Multiple MRA Robustness

Variables	(4) Fixed effects partial_correlation	(5) Random effects partial_correlation	(6) Mixed effects partial_correlation
sePartial	-2.92	-0.63	-2.12
	(-1.34)	(-1.67)	(-1.86)
socxgdp	0.34	-0.05	-0.10
	(4.57)	(-2.06)	(-1.73)
scruggs	0.30	-0.03	-0.05
	(13.17)	(-0.87)	(-1.26)
socxpart	-0.24	0.03	-0.01
	(-4.21)	(1.79)	(-0.27)
kof	0.11	-0.06	-0.07
	(4.92)	(-2.13)	(-1.39)
globindicator	-0.14	-0.01	0.01
	(-9.67)	(-0.98)	(0.76)
nocountries	-0.00	-0.00	-0.00
	(-1.07)	(-0.20)	(-0.75)
noyears	-0.01	-0.00	-0.01
	(-2.18)	(-0.77)	(-1.77)
yrpublished	0.00	-0.01	-0.01
	(3.81)	(-2.32)	(-1.20)
xs	-0.50	0.11	0.01
	(-2.47)	(3.64)	(0.25)
tspd	-0.30	-0.27	-0.38
	(-2.60)	(-5.25)	(-2.53)
beckkatz	-0.33	0.06	0.10
	(-5.14)	(2.10)	(2.11)
oecd	-0.29	0.07	0.11
	(-3.25)	(1.86)	(2.03)
latam	0.03	0.08	0.15
	(0.36)	(2.74)	(2.18)
primary	-0.11	-0.02	-0.04
	(-14.21)	(-0.47)	(-0.61)
left	-0.29	0.05	0.06
	(-10.97)	(1.88)	(1.34)
political	-0.30	-0.08	-0.13
	(-16.44)	(-3.76)	(-2.91)
Constant	-2.71	11.33	12.66
	(-2.67)	(2.38)	(1.26)
Observations	414	414	414
R^2	0.40	-	-
Adjusted R^2	0.344	0.2802	.
Standard error of regression	0.0910	.	.
F-test (H0: all coefficients = 0)	P=0.000	P=0.000	P=0.000
Number of groups			33

Notes: Dependent variable = partial correlation. Model 4 is estimated with WLS with precision squared as weights. (aweight in Stata 13) and includes author dummies (excluded for presentation) Model 5 use the metareg command in Stata. Model 6 is a mixed effects regression, covariance independent. WLS= Weighted least squares. The numbers in parentheses are t-statistics.

First, notice that there seems to be robustness across all the models reported. The coefficients are highly consistent. The only models that stand out are the random effects model, model 5, and the mixed effects model 6 which estimates different coefficients and t-values than the other models. This is as expected given that it is known that random effects MRA "generates excess variation in applied econometrics" (Doucouliagos and Paldam 2013:586) and should not be relied upon.

In the models, some of the moderator variables are not statistically significant at any level. This is either because the variables does not have any effect on the partial correlation, or" in some cases it is due to multicollinearity, which is often a problem with MRA" (Doucouliagos and Paldam 2008:13). The VIF test can be used to measure multicollinearity (Midtbø 2012:129). The mean VIF in model 1 equals to 2.49, indicating that multicollinearity is not a problem in the data sample.

In model 1, six of the moderator variables are significant at the 10 percent level in a two-tailed test. In the g-t-s model, four of the moderator variables are estimated with statistically significant coefficients at the ten percent level. Although the sePartial coefficient is not significant, this variable must be included to account for potential publication bias. This implies that these moderator variables will typically increase or reduce the partial correlation. The variables for cross-sectional analysis, Scruggs, KOF, political and socxpart are significant in the g-t-s model. The g-t-s model is also the preferred model. To jointly test whether these moderator variables and the constant are jointly zero can serve as a test for a genuine, systematic patterns among reported findings (Stanley and Doucouliagos 2012:98) . This is easily rejected ($F(7, 409) = 24.32$ $p= 0.0000$), thus there are genuine and systematic patterns among research findings.

In model 3, cluster robust standard errors are used to handle author dependency. The studies are clustered by studyid. As the table reveals, clustering has little practical effect. The MRA coefficients remain the same, although the t-values are smaller.

The subsequent models, model 4-6 presented in table 6 are only included for the sake of robustness.

Model 4 is a fixed effects MRA. Compared to the WLS models, the fixed effects model report some differences regarding statistical significance and direction of the coefficients.

The random effects model is included in model 5. Notice that the random effects model reports higher t-values, and that the model also reports different directions for some of the coefficients compared to the WLS models.

Model 6 is a mixed model where estimates are nested within studies. The direction and size of the coefficients are comparable and not noticeably different from those in the WLS models.

Although the different estimation techniques reports some differences regarding the estimation of the coefficient, the most important and robust finding is that all the models suggest that there is no publication bias since the separtial-coefficient does not reach any level of statistical significance in any of the models Therefore all the models, regardless of estimation technique, robustly confirm the absence of publication bias in the globalisation welfare state literature.

Interestingly, the g-t-s model reveals that some of the moderator variables are important in explaining the differences between studies (i.e. they are significant).

Further, Stanley and Doucouliagos (2012:104) note that "a successful meta-analysis will find consistent overall results between the simple FAT-PET-PESSE-MRA models and the multiple MRA models regarding the presence of publication selection, the existence of a practically significant empirical effect(or not), and the approximate magnitude of the corrected effect" , which is exactly the case in this meta-analysis.

Robustness

Following standard econometric practice, some robustness checks and model diagnostics are necessary. "In general, meta-regression analysis can use the full arsenal of econometric techniques and methods" (Stanley and Doucouliagos 2012:68) to account for the robustness of the findings. Therefore some post-estimation tests are also included.

First of all, robustness is ensured through the reporting of several models, including WLS, g-t-s modelling, WLS with cluster robust standard errors, fixed and random effects, and a mixed effects model.

Dependency among estimates and the correction of the MRA's standard errors are taken into account by applying robust and cluster robust standard errors in model 1,3 and 4. Furthermore, a mixed effects model is included in model 6.

In the F-test, all the moderator variables are jointly significant (p=0.000) in the all the models included.

Some post estimation tests are also included to statistically test the models.

First of all, the Breusch-Pagan / Cook-Weisberg test for heteroscedasticity suggest that the model is not homoscedastic (p=0.000), therefore a standard OLS approach to the data is not appropriate, as theory suggest. Therefore, the OLS model (reported in the appendix) is rejected in favour of the models using WLS. In order to address this heteroscedasticity, WLS with precision squared as weights are used.

The Breusch-Pagan Lagrange multiplier (LM) test can be used to test if there are significant study-level effects. (Stanley and Doucouliagos 2012:103). The BPLM test is significant at any level(p=0.000), therefore, study-level effects are present.

To answer whether or not a fixed or random effects model should be used, the Hausman specification test can be used. The Hausman-test is significant, indicating that the fixed effects model is the preferred specification (p=0.0015). Thus, if the final model was to be chosen between a fixed and random effects MRA, the fixed effects would have been preferred. However, given the superiority of WLS-MRAs over both fixed and random effects, this is just included as a robustness check.

Interpretation of the Explanatory Power of the MRA, R^2

A common metric to consult for the explanatory power of any regression, is the R^2. In a MRA the R^2 can also be used to explain the variation in the dependent variable, in this case, the partial correlations. Stanley and Doucouliagos (2012:133) note that the "explanatory power of reported MRAs ranges from 0.08 to 0.98 depending on the research issue and specification of the MRA". In their assessment of 140 meta-analysis in environmental economics Nelson and Kennedy (2009:362) found the average adjusted R^2 to be 0.48 (with a median of 0.44) Whilst Stanley and Doucouliagos (2012:133) found the half of the meta-analysis presented in their

book explained more than 50 percent of the heterogeneity. Compared to these numbers, this meta-analysis explains around 15-34 percent of the observed heterogeneity, which is less than these “average” meta-analyses. Although, the MRA capture about 2 percent (model 1 and 3) of the variation in the partial correlations which is relatively high.

In this section, the empirical analysis of the data presented in chapter 4 is presented in table 4 and 5. The models rely on state-of-the-art meta-regression methodology. First of all, publication bias is investigated through a funnel plot. Then the FAT-PET MRA follows to test for publication bias and a genuine empirical effect. Finally, multiple MRAs with moderator variables are included. All these approaches are consistent and display robustness: Publication bias is not present in the globalisation-welfare state literature. Furthermore, the analyses show that there is heterogeneity between studies.

In the section that follows, the sources of heterogeneity between studies are discussed in a more rigorous manner. The interpretation of the results is straight forward since the estimates are binary dummy variables. As mentioned earlier, the separtial coefficients capture potential publication bias, and thus, if not significant, the interpretation is that there is no publication bias.

Chapter Six: The "Statistical" Significance of the MRA

This section sums up the results found in the meta-analysis, as shown in table 4 and 5. The results are interpreted across the models presented, and the reader should by now note that the search for models with high degrees of statistical significance is not the main objective of the MRA, but rather how the moderator variables affect the literature. If a moderator variable is "statistically significant and positive (negative), coefficient in the MRA indicates that the variable increases (reduces) the size of the partial correlation, which again increases (reduces) the effect of globalisation on the welfare state" (Costa-Font, et al. 2014: 14). If a moderator variable on the other hand, is not statistically significant, this indicates that the specific "study characteristic fail to explain the heterogeneity of the empirical findings"(Adam, et al. 2013:207).

The FAT-PET-MRA

The FAT-PET-MRA indicated that there was no true empirical effect of globalisation on the welfare state. The PET is estimated to be 0.02 (t=1.09, t=0.59) in column 1 and 2 and 0.02 (t=1.06) in column 3 in table 4, which also is close to what the classical meta-analysis found (0.029 for the fixed effects model, and 0.028 for the random effects). Yet a small and positive effect is found. The FAT-PET-MRA did neither find evidence of publication bias in the literature, the FAT was estimated to equal 0.09 (t=0.09) in column 2, table 4. In order to fully and robustly accommodate publication bias, a multiple MRA was conducted.

Publication bias

Firstly, as noted that the variable sePartial is not statistically significant, regardless of estimation procedure. This is consistent with the funnel plot and the simple FAT-PET-MRA, suggesting that there is no publication bias, even when the moderator variables are included in the multiple regression framework. This also suggests that there is robustness in the previous findings of the FAT-PET MRA, and also the funnel plot. It should be noted that now, the sePartial-coefficient does not alone accounts for publication bias, but that publication bias "occurs through both the SE term, as well as SE interacted with other study characteristics" (Doucouliagos and Paldam 2011b:17).

The Genuine Empirical Effect Revisited

Doucouliagos and Paldam (2011b:20) note that "while selection bias is interesting, the essential issue is whether there exist genuine empirical effects". Therefore a predicted[31] genuine empirical effect from the multiple MRA is included. This is done by first removing any publication bias by setting sePartial=0. When sePartial approaches zero, "a study approaches perfection with no estimation error and no publication bias" (Stanley and Doucouliagos 2012:93). According to Doucouliagos and Paldam (2011b:20) the coefficients that "potentially can be interpreted as estimating heterogeneity on the size of the genuine empirical effect are the country dummies" and one of the time variable. Thus, when publication bias is removed, both country dummies included (oecd, latam), and the average year of the published studies are included (2005), the genuine empirical effect is predicted to equal +0.1. This prediction[32] is certainly larger than the effect the FAT-PET MRA found, however, it is still considered small in terms of Cohen's guidelines. Therefore, this prediction suggests that even with no publication bias in the literature, globalisation has at best a small effect on the welfare state.

Measure of the Welfare state

The literature suggests that the different measures of the welfare state are of importance regarding the discrepancy between the outcomes of studies, and that the choice on the dependent variable also can be crucial in explaining the differences between studies. They certainly are.

The findings in the model suggest that the different measures produce mixed results; studies using the Scruggs-measure are statistically significant and negative, while studies relying on the socxpart measure are positive and significant in the g-t-s model. When applying the socxgdp the estimate suggest a negative coefficient. This thus suggests that choice of welfare measure have an impact on the outcome. When Scruggs and socxgdp is used, results are negative, whilst socxpart produce positive results. Interestingly, the g-t-s model suggests that

[31] See especially Doucouliagos and Paldam (2011b:20) and Stanley and Doucouliagos (2012:93,98-99) for further explanation of this approach.
[32] The prediction is obtained by using the margins command in Stata: margins, at(seP=(0)oecd=(1) latam=(1) yrpublished=(2005))

two of the welfare measures are significant, Scruggs and socxpart, and thus plays an important role when choosing upon the independent variable in primary studies.

For example Kaufman and Segura-Ubiergo (2001), Avelino, et al. (2005), Brady, et al. (2005) and Burgoon (2001) relies on the socxpart-approach. All these studies find (even if not significant) positive relationship between some measures of globalisation and the welfare state when the soxcpart is employed. The findings when using the socxgdp measure is rather mixed in primary studies, but the overall finding suggests that relying on total government expenditures in terms of GDP will produce negative results.

Further, the findings of the meta-analysis suggest that the dependent variable problem certainly is real. Since the different variables produce very different results, it is of great importance for scholars and researchers to be aware of this finding. Thus, a suggestion for future researchers would be to include at least two measures of the welfare states in primary studies.

Measure of globalisation

The discussion in the second chapter suggests that the measure of globalisation also is of importance in explaining the difference between studies. The measure of globalisation ranges, as mentioned earlier from one to six variables in the studies. It was therefore expected that these choices would have an impact on the outcome. When the KOF index of globalisation is employed the effect is negative in all models, suggesting that studies using the KOF index will report a negative effect of globalisation of welfare. The KOF variable is also significant in a one-tailed test, in the g-t-s model. When Dreher, et al. (2008) employ the KOF-index in their analysis, the globalisation welfare state effect almost always end up being negative. Kwon and Pontusson (2010) also end up with a negative estimates in their analysis when they disaggregate welfare spending over periods of time.

The total numbers of globalisation indicators are negative across all models, although only significant in model 6. This suggests that studies that include more globalisation variables tend to report more negative results. In the literature there is little consensus on the how to best capture globalisation as the independent variable (Jahn 2006). Koster (2009:159) notes that when including several variables one variable can have a positive effect, while another variable can have a negative effect, thus making the total outcome mixed, e.g. trade openness

might exhibit a positive effect, while FDI can have a negative effect. For example Ha(2009) includes six globalisation variables. In this study FDI have a negative coefficient, while capital mobility have a positive coefficient. Rudra (2002) on the other hand, using trade and capital flows as her globalisations variables, arrives at a positive effect.

Therefore, the results suggest that both the numbers of globalisation variables included and the measure of globalisation itself is of importance. Therefore, as with the welfare state, it is important for future research to include an assessment of the globalisation variable(s).

Data structure

Several meta-analysts have considered including OLS as a specification technique as a moderator variable. However, in the meta-dataset for this thesis, almost all of the studies rely on OLS models. Therefore, motivated by the literature and statistical theory, the beckkatz variable was included to account for statistical specification technique instead in order not to "waste" available degrees of freedom.

The beckkatz variable ends up being positive, although not significant. It is suggested that using the "de facto Beck and Katz" specification can introduce a nickel-bias, and thus making the effect larger than it actually is. Kittel and Winner (2005) exclusively deals with this in their methodological "fine tuning" of the globalisation-welfare state literature in their study. They suggest that "inserting a lagged dependent variable in a model with fixed country effects indices an additional bias via the correlation between the lagged dependent variable and the individual effects" (Kittel and Winner 2005:278). Therefore, an inclusion of the de facto Beck and Katz specification will increase the partial correlation.

Time-series-panel data vs cross-sectional data

The variable for time-series-panel data (tspd) is reported with a negative coefficient, while the cross-sectional variable ends up being positive. The cross-sectional data variable is also highly significant in the g-t-s model. This suggests that when a cross-sectional study design is used, the results tend to be in favour of the compensation hypothesis (see for example Rodrik 1998). On the other hand, when the data is a time-series-panel analysis, the effect is negative. That means that a time series panel analysis finds a negative effect. However, this observation

does not imply that researchers should rely on cross-sectional studies only. Recall that the cross-sectional studies are by definition less precise than time-series studies due to their larger standard errors.

Year published

The yearpublished variable is common to include in meta-analysis, "as a means to account for potential trends or path dependencies in research" (Stanley and Doucouliagos 2012:22). The year the study is published have a negative coefficient, but is not significant. This suggests a negative time trend in the globalisation-welfare state research: newer studies will report a negative effect of globalisation on the welfare state. According to Wood and Eagley (2009:463) the time a study is published can be of importance due to temporal changes in culture or other factors that affects the phenomena or it could be related to the publication practices in science.

Number of years

When a study includes a longer time period for the data, the results is a negative influence, although not significant. Adam, et al. (2013:207) suggest that "economic integration is a dynamic phenomenon which becomes more intense over time. Therefore it is natural to expect studies that include more recent data…to report a significantly higher negative effect".

Another explanation for the negative coefficient "is that it might reflect better data or improvements in the quality of estimates over time", if this is accepted, the MRA suggest that new data or improvements over time have not had any practical impact" (Costa-Font et. al, 2013:15) on the magnitude or interaction of globalisation.

Ha (2008:789) propose that there is a trade-off in terms of the numbers of countries and numbers of years included in an analysis. "Including more countries makes data available for fewer years, whereas including more years reduces the data on a number of countries" (Ha 2008:789). This observation is easily seen in the primary studies, cross-sectional studies includes many countries, while panel-data studies have fewer countries, but consider a longer period of time. Rodriks (1997) study, for example, have 68 countries included, however, the time period considered is an average of social expenditures of GDP over 1985-1989. The

most comprehensive study in terms of the time-series-panel data approach is the study by Rudra and Haggard (2005) that contains 57 countries over 22 years. Recall that the average study however is found to contain 24 countries over 22 years.

Numbers of countries and regional setting

Both the country dummies are positive and have approximately similar coefficients, but are not significant. This suggests that both Latin American countries and OECD countries will have more welfare as a result of globalisation. These findings suggest that there are small differences in the direction of globalisation in mature welfare states (OECD), as well as in the more developing welfare states (Latin-America).

It would have been interesting to look at other geographical regions as well. However, recall that only 7 percent of the studies in the meta-dataset have included other countries than OECD countries. Due to limitations in data for other countries in the primary studies, the possibility of including other regions is limited in this MRA, and is therefore not included.

The total numbers of countries are negative, but not significant. When primary studies include more countries in the sample, the effect of globalisation will be negative. However, it should be noted that most of the studies using more than 20 countries relies on cross-sectional data due to data limitation. Moreover, findings from cross sectional studies are often not as suitable as time series studies to identify causal relationships, since time can be considered as an important explanatory variable (Midtbø 2000:59). Especially in regard to globalisation, time can be considered as an important explanatory variable, since globalisation is a dynamic phenomenon that develops over time.

Left

In line with the theoretical arguments the left variable has a positive, but non-significant effect in most models. As argued the inclusion of some left variable is often connected to a subscription to the compensation hypothesis. Pierson (2001b:414-415) suggest that welfare policy is characterised by "stickiness", and that "certain courses of political development, once initiated, are hard to reverse" (Pierson 2001b:414). This stickiness or path dependency can be one explanation for why the left variable does not yield significant results.

Study written by political scientist

If the study is written by an author with a political science background the result is negative. This implies that when a study is written by someone who is not a political scientist, the result tends to be in favour of the compensation hypothesis. The political variable is also significant in the g-t-s model thus suggesting that who actually writes the study is of importance. Therefore, the discipline bias that Adam, et al. (2013) found in their meta-analysis of globalisation and capital taxation does not seem to apply to globalisation and the welfare state literature.

Primary

If the primary goal of the study is to explore the relationship between the welfare state and globalisation, a negative effect is found. On the other hand, if studies include a globalisation-welfare model, but if this model is not the primary goal of the study, a positive effect is found. This can partly be explained by the fact that studies that does not have the welfare state-globalisation nexus as their point of departure does not pay too much attention to methodological fine tuning, but merely include globalisation-welfare state as a control for robustness.

The findings provided in this analysis, are very close to the findings of Haile and Pugh (2013). In their meta-analysis of exchange rate volatility and international trade, they suggest that:

> The findings are consistent with an empirical literature informed by competing perspectives which: Reduces incentives to select results of a particular sign or size and is thus consistent with an absence of publication bias; and yields estimated effects characterised not by an overall authentic or true effect but, instead, by pronounced heterogeneity (Haile and Pugh 2013:17).

The globalisation-welfare state can be said to follow the same lines. As this thesis, and, especially the MRA, has shown, the literature is "competitive", there is an absence of publication bias due to this competitiveness, and the effect is very small, yet positive, and largely driven by heterogeneity.

Summing up the overall findings and answering the research question, the results of the MRA are presented in Table 7.

Table 7: Research Questions, Hypotheses and Outcome.

Research question	Hypothesis	Finding
Q1:What is the effect of globalisation on the welfare state.	There is an effect of globalisation	Globalisation has an effect on the welfare state, and it is positive.
Q2:Is publication bias present, and does it affect the literature.	Publication bias is not present due to the polarisation of studies	Publication bias is not present, and does not affect the literature
Q3:Are there systematically differences between studies, and does it affect the literature.	There are systematically differences between studies that affect the literature.	There are certainly differences between the published studies, i.e. Heterogeneity can account for and explain much of the variation and differences in the outcomes of published studies.

As Stanley and Doucouliagos (2012:126) note "a natural application of the MRA is to test rival theories". In chapter 2, three theories or hypothesis of both the magnitude and direction of globalisation's effect on the welfare state is presented. As seen, all of these theories have a solid research base, and has thus made it hard to draw useful conclusions in the past.

Based on the results found in this meta-analysis, it seems that economic globalisation have a small and positive effect on the welfare state. In other words, the preliminary conclusion is that economic globalisation poses no threat to the welfare state. Previous studies have also concluded that there is "no race to the bottom" in terms of welfare spending (e.g. Rodrik 1998; Avelino, et al. 2005; Garrett 1998; Ha 2008), and governments still will compensate through an enlarged role for the welfare state. However, other factors have also been considered as important for the enhanced role of the welfare state. Among others, Swank (2002), Pierson (2001a,b) and Iversen and Cusack(2000) suggest that domestic factors are more important in explaining cutbacks and restructuring in welfare spending among governments.

Although the conclusion drawn here are basically the same as the previous narrative reviews by Schulze and Ursprung (1999), who concludes that "globalisation does not appear to have given rise to any significant retrenchment of the welfare state" (Schulze and Ursprung 1999:346) and Koster (2009) who suggest that "welfare states are not necessarily in danger because of economic openness" (Koster 2009:160), This analysis have done more. First of all, an objective assessment of the relevant quantitative literature has been conducted by applying a meta-analysis. Secondly, more advanced methods than vote counting are used in order to summarize the literature, and finally, publication bias is also taken into account and tested for.

There are certainly systematically differences between the studies in this meta-analysis. As Ursprung (2008:5) suggests "it cannot be denied that methodological shortcomings may well be responsible for some of the observed discrepancies between studies that analyse closely related issues". As discussed earlier, there is no established "best practice" especially regarding the choice of the dependent variable, the welfare state, and the main independent variable of interest, globalisation. This meta-analysis has shown that these methodological differences play an important role regarding the different outcomes between studies.

Further, the analysis contributes to the research field by "offering critical prior information that can be legitimately used to shape primary econometric models." (Stanley and Doucouliagos 2012:132). As the MRA models has shown, several of the study characteristics are significant, suggesting that these variables systematically influence the effect in primary studies. The g-t-s approach suggests that some variables are of importance for future research on the globalisation-welfare state nexus. First of all, the measure of welfare state is important. Using time-series-panel analysis is also important, and finally, the measure of globalisation is

also a significant factor. Therefore, a "best-practice" for future research will be to rely on time series panel data. Furthermore, a critical reflection on the dependent and independent variables are necessary since they significantly affect the outcome.

When it comes to publication bias, this is not a problem in the sample of studies under scrutiny. This is an uplifting observation, given that several research areas in political science and economics are "haunted" by publication bias (Doucouliagos and Stanley (2013), and that "publication bias must be regarded as the "rule"" in empirical studies (Stanley, et al. 2008). However, given the wide polarisation of the studies used in this thesis, this is expected due to the competitive nature of the literature. Hunter and Schmidt (2004:493) note that publication bias may not exist in some literatures, and this MRA is one example of this.

The last few years it has been quiet from the research field as shown by the relatively few studies published after 2008 in table 2. New and improved data, however, have started the debate again. A recent trend is to focus on replacement rates as the dependent variable, instead of the traditional measure of government expenditures of GDP committed to welfare. In addition resent scholarship has started to use Scruggs index based on the classical work of Esping-Andersen. The measure of globalisation has also been subjected to further investigation, for example though the updating of the KOF-index of globalisation. Furthermore, the scholarship of e.g. Koster (2014) and Schaffer and Spilker (2009) have investigated how the micro-level, i.e. individual's attitudes towards welfare in a globalised world are. For future meta-analyses and researchers this new literature certainly will be interesting.

The results of this meta-analysis are very clear-cut. Although a small effect is found, it should be noted that the results of any MRA can change over time "because the underlying relationships have changed over time and/or because new estimators and MRA modelling developments find something different" (Stanley and Doucouliagos 2012:134). Especially regarding the latter, an encompassing best practice in terms of MRA modelling is not yet in place. The thesis has relied on state-of-the-art methods of MRA at this stage, but these methods might change when more research on the underlying statistical assumptions of MRA is offered for future meta-analysts. An illustrative example of this is the change from relying

on fixed effects to WLS modelling of MRA. Since the globalisation-welfare state literature has a solid research base and is quite mature and established, the presented sample is representative for the research. However, globalisation is a dynamic phenomenon; therefore a challenge for this meta-analysis is to keep "up to date" with new publications on the field. Therefore, what is valid in this meta-analysis might change over time especially regarding the "true empirical effect", but also publication bias.

Another important question to ask is whether or not domestic policies are shaped by an exogenous factor like globalisation, and if policy makers should pursue globalisation friendly policies or not . Hunter and Schmidt (2004:29) argue that "by providing the best available empirically based answers to socially important questions, meta-analysis can influence public policy making". This MRA, has shown at best that globalisation have a small, positive effect on the welfare state. Substantially, this means that when the welfare state is met by globalisation governments will compensate those harmed by globalisation (cf. Rodrik 1998); therefore, globalisation is "good" for the welfare state.

This section has presented the results for the overall meta-regression analysis assessment. First, the results suggest that there is a small positive effect of globalisation on the welfare state (Q1). Secondly, no publication bias can be found in the meta-data sample (Q2) and thirdly, there are systematically differences between studies (Q3). Furthermore, the MRA suggests that some moderator variables are more important than others. Interestingly two of these variables are related to the dependent variable in primary studies. In the next section the practical significance of the findings are discussed more in-depth

Chapter Seven: The "Practical" Significance of the MRA

This section includes a discussion of the practical significance of the findings. The overall finding suggests that governments do not have to reduce welfare when met by globalisation as the efficiency hypothesis predicts. Since the effect itself is found to be relatively small, even without publication bias, additional factors that might be of importance for an expansion of the welfare state are also discussed.

McCloskey (1985, 1995) has suggested that there is a distinction between statistical and economic importance/practical significance and that quantitative methods often overlook the practical importance of statistical findings. The discussion above can be said to be a discussion of the statistical significance. Although the findings suggest that there is a non-statistical and small effect of globalisation welfare, the effect is still found to be positive. In the following section, the practical significance of the findings is discussed, that is, what a positive relationship between globalisation and the welfare state actually implies.

First of all, it should be mentioned that a practical significance is found by the statistical significance of the analysis is present. This is related to the methodological framework. Since "a meta-analysis shines light on the research process itself, it can also guide new and original primary econometric analysis" (Stanley and Doucouliagos 2012:150). Especially the significant moderator variables demonstrate that it makes a difference when authors use different dependent and independent variables in their research.

As argued by the efficiency hypothesis, governments will reduce capital taxation when met by globalisation, thus lowering the tax base available for governments, and as a consequence the result is a reduction of welfare. Therefore the efficiency hypothesis suggests that globalisation will have a direct negative effect on taxation policies and consequentially on the welfare state. This argument is thus related to how governments will act. They can either choose to reduce capital taxation, or not. The question is therefore if it is necessary for governments to reduce capital taxation to attract international investments.

Mosley (2005) has suggested that there are some ideological and methodological reasons for why the efficiency hypothesis still is considered as a possible explanation "despite the accumulation of empirical evidence against the [it]" (Mosley 2005:359-360). First of all, the

ideological reason suggests that globalisation is a useful scapegoat for politicians striving for neoliberal policy change. If politicians want to change policies, they can convince voters that they have reduce welfare since globalisations give them no other option. The methodological reason is that it is "quite easy to find instances of governments cutting social programs or lowering taxes" (Mosley 2005:360).

Since the MRA has not found any support to the efficiency hypothesis, a natural turn to the compensation thesis follows. The compensation thesis argues that the welfare state will benefit from a rise in globalization. This assumption rest on two casual mechanisms according to Iversen and Cusack:

> First, trade and capital market integration is said to expose domestic economies to greater real economic volatility, which implies higher income and employment risks for workers. Second, greater labor-market risks are hypnotized to generate political demands for expansionary spending policies that will cushion and compensate people for such risks. (Iversen and Cusack 2000:317)

Therefore, the findings suggest that governments will have an important role in mitigating the negative challenges globalization brings about.

Hay (2001:54-57) have highlighted some of the positive externalities for the compensation hypothesis on the welfare state. First of all, high levels of social expenditures will enhance economic stability. Unemployment benefits tend to increase demands in times of recessions. Transfer payments to the working class can stimulate consumption, therefore, "governments that inject demand into the economy during times of recession, are likely to facilitate macroeconomic stabilization across the economic cycle" (Hay 2001:54), public housing can boost consumption since subsidization or provision of housing frees capital for consumption, thereby raising the demand within the economy. With an enlargement of the public sector and health-care sector support for (especially) women employment increases, thus increasing the labour supply and productivity, in addition to easing the fiscal pressure generated by demographic change, since the ratio between welfare contributors to net welfare recipients will increase. Through training and education, human capital is enhanced. Since the skill level of the economy in the era of heightened competitiveness is essential, the welfare state have an

important role in providing training and skills that are necessary for the economy. (Hay 2001:56). Health provided by the state, can also reduce both social stratification and decrease the volume of health care costs.

Although the effect is found to be positive in the MRA, it is considered as quite small according to Cohen's guidelines. Furthermore, the FAT-PET-MRA finds no true empirical effect of globalization on the welfare state. In their meta-analysis of globalisations effect on capital taxation, which is the most comparable meta-analysis to the issue in this thesis, Adam, et al. 2013 also provide evidence that globalisation does not have a "true" empirical effect on capital taxation. Therefore, other explanations in combination with the compensation hypothesis can be offered. The sceptic hypothesis presented in chapter 2 provides some alternative explanations that can be considered.

First, the political incentives to expand welfare must also be taken into account. This is based on the more partisan perspective of welfare expansion presented by among others Garrett and Huber and Stephens. According to this view, globalisation will generate political incentives for in support of larger government spending due to economic insecurity and increased inequality (Garrett 2001:6). "Political support for the public economy remains very high—all the more so when citizens feel that globalization is threatening their traditional quality of life" (Brune and Garrett 2005:419). Furthermore, "social policies will always be feasible if the population at large is in favour of an extended welfare state" (Schulze and Ursprung 1999:346). Therefore, as again, the literature and the MRA result suggest, left power can be considered as a sufficient, but not necessary condition for welfare state growth.
However, other scholars have suggested that political partisanship does not matter that much for welfare spending. Both due to the popularity of the welfare state, and the welfare state`s inherently path dependent nature, as discussed by Pierson (2001a,b).

Genschel (2004:632) notes that globalisation is not irrelevant, but that "political reactions to globalisation are not entirely pre-programmed by globalisation itself but also depend on domestic structures". These domestic structures can also be taken into consideration when explaining welfare state outcomes. The list of these structures is very long, and many variables can be considered as important. It is argued that production regimes (Hall and Soskice 2001) different "worlds of welfare" (Esping-Andersen 1990), and political

institutions (Swank 2002) also can play a large role in welfare state preferences amongst governments.

Veto-players can also be important for policy change (see Tsebelis 1995) since veto-players can play a pivotal role in the relationship between welfare spending and globalisation (Ha 2009:784). In her study, Ha (2009:804) suggest that more veto players and "increased ideological distance among them reduce the upward pressure of globalisation on welfare spending. Swank (2002:34-35) also suggest that veto points are of importance. Swank (2002:279) further suggest that political institutions are of importance for shaping welfare state preferences, "namely the structure of the system of collective action groups…electoral representation…the structure of decision making authority and the structure of welfare state institutions."

Pierson (2001a,b) has put strong emphasis on socioeconomic changes within countries as the most important determinants of welfare state growth. He does however, make clear that globalisation is and important aspect to take into account, but Pierson (2001a:82-99) suggest that the slowdown in productivity, demographic shifts (i.e. people getting older), the maturation of welfare states and the changes in household structures are more important than globalisation.

Iversen and Cusack (2000) have emphasised the change in the work structure, i.e. deindustrialisation, as the most important factor for the growth of the welfare state and risks in the labour market. The change from manufacturing industry to service have resulted in a reduction of the possibility to "travel" across sectors (Iversen and Cusack:324-327) and thus creating a risk that only can be addressed "through government expansion of social security and public economy" (Iversen and Cusack 2000:346).

It is hard to say if governments actually will increase welfare spending, since this choice ultimately will rest on several other mechanisms. For example Swank (2002:38) suggest that globalisation "enhances the appeal of policy preferences of Right parties…neoliberal economists and other proponents of neoliberal orthodoxy" which again can be linked to cutbacks in welfare spending. Therefore, the ideological motives for a potential reduction in welfare can be considered as important. However, the overall findings suggest that governments at least have the ability to increase welfare spending in the era of globalisation.

Some Concluding Remarks

This thesis overall aim has been to investigate economic globalisations effect on the welfare state. The theoretical literature on this area is very inconclusive and polarised and there is no consensus among scholars about the effect. By applying MRA as the methodological framework to 33 studies, with 417 corresponding comparable estimates, several important findings are found:

First of all, the overall effect of globalisation on the welfare state has been investigated. According to the literature there are three possible outcomes of the effect of globalisation on the welfare state. The welfare state is either increased, reduced, or there is no effect.

Through MRA, the evidence suggests that there is an effect of globalisation on the welfare state, and that the effect is positive, although the effect is considered as small, and of relatively little practical significance. Nevertheless, a small positive effect is found, therefore the findings can be said to have found support for the compensation hypothesis.

The most important contributions of this thesis however, are the investigation of publication bias and heterogeneity across studies. The issue of publication bias has been addressed through a graphical interpretation and statistical methods. Given the wide polarisation of studies in the globalisation-welfare state field, an incentive to prefer one side of the debate over the other was considered not to exist. Through the funnel plot, the FAT-PET-MRA and the multiple MRA, the empirical evidence suggests that this is true. Publication bias in the globalisation- welfare state literature is not found.

Thirdly, the issue of heterogeneity has been addressed through multiple MRAs. Theoretically, this is shown in the relatively large span of studies investigating the same phenomenon, but reach very different conclusions. By including a multiple MRA framework with moderator variables that are considered to be important, the findings are that there is large heterogeneity across studies, and that some of these moderator variables are shown to be of great importance for future research.

The thesis has contributed to the scholarly field by applying meta-analysis to a topic that has not been meta-analysed before. Moreover, the findings suggest some fields that needs more research. One focus could be on the domestic factors that increase or reduce welfare spending. Especially, qualitative case study research might focus on specific globalisation friendly/unfriendly policies in countries with high/low levels of globalisation. For quantitative research, on the other hand, a "best-practice" in welfare – globalisation research also needs further attention from scholars. The well-known "independent variable problem" needs to be taken seriously. As the multiple MRA has shown especially the dependent variable is of high importance for the result when modelling globalisation-welfare state regressions. Therefore, more effort is needed in the future to address the independent variable problem. Moreover, the MRA suggest that further research is needed on Latin American countries and other less developed countries. A large proportion of the studies (93 percent) included in this thesis are based on OECD countries with mature welfare states. Therefore a suggestion for future research would be to take a closer look at the globalisation- welfare state relationship in other countries than those of the OECD.

It seems plausible that Goldfarb (1995) suggestion was right. The globalisation – welfare state literature has followed a time trend and reproduced itself in a time-circle when it comes to the result. Closing the circle, the evidence from this thesis suggest that we can go back to the seminal works of Cameron (1978) and Katzenstein (1985), who did indeed suggest that globalisation is good for the welfare state.

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Appendix

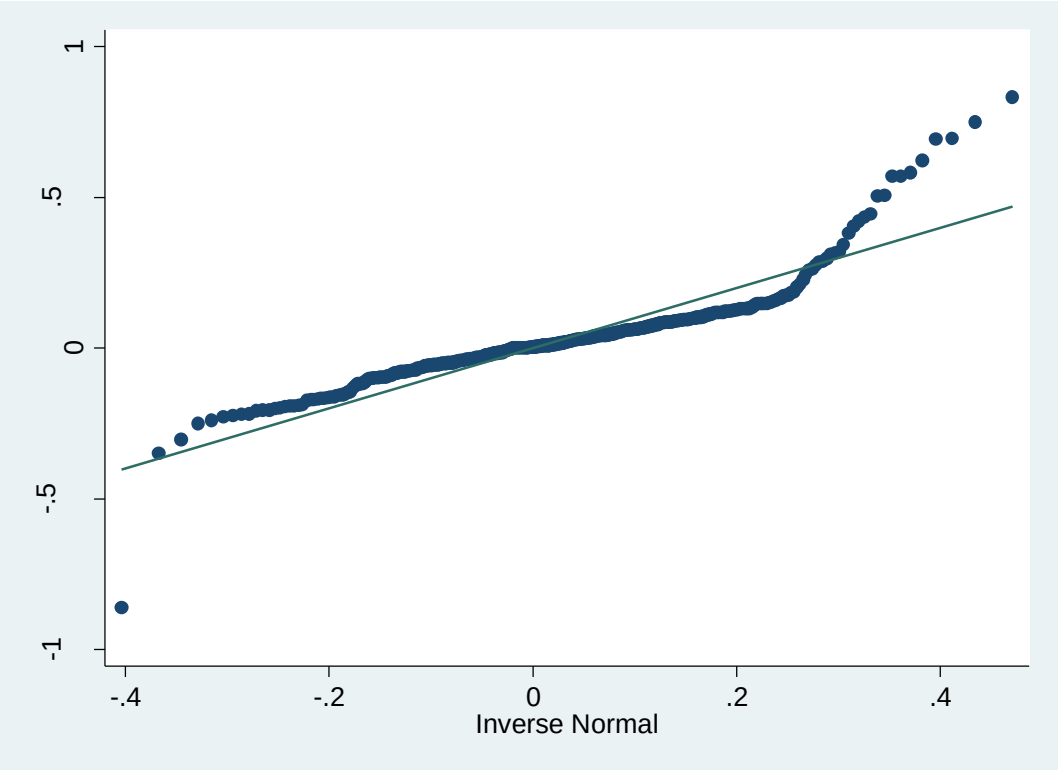


Figure A-1: Q-norm plot of partial correlation vs inverse normal.

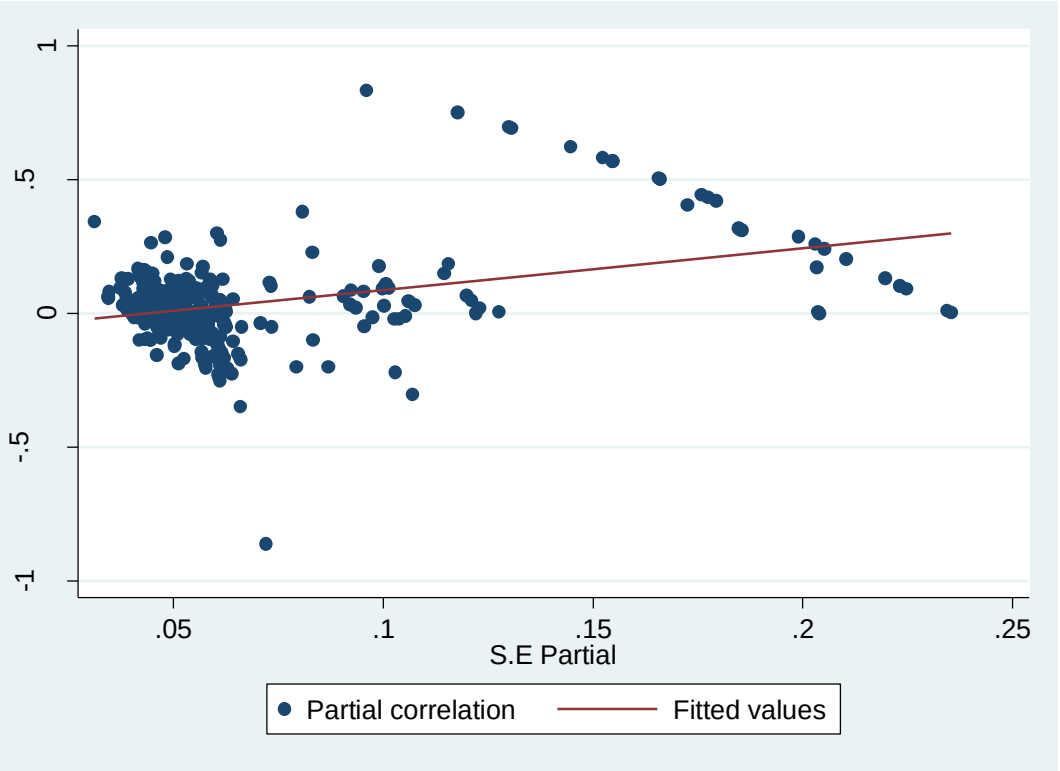
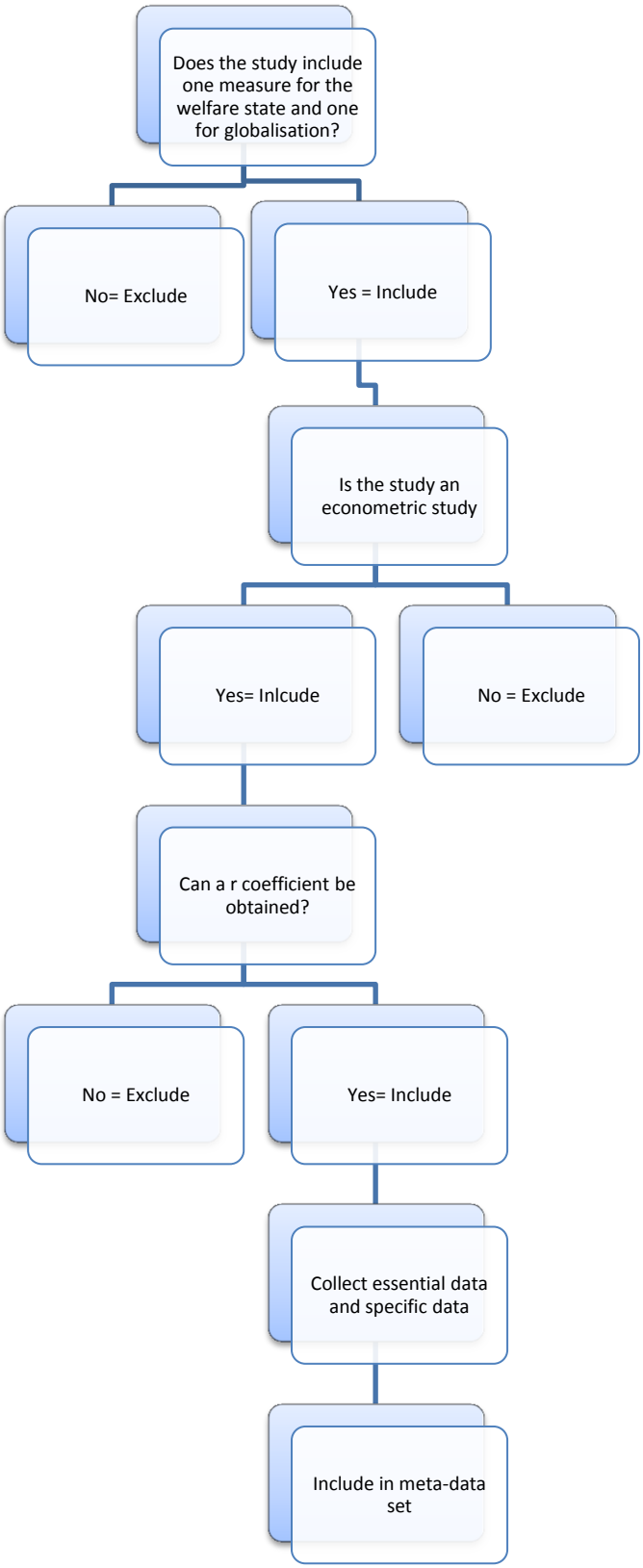


Figure A-2: Scatter plot with of partial correlations linear regression fitted

Figure A-3: Search Protocol for Inclusion of Studies



Tale A-2: OLS multiple regression

VARIABLES	(1) olsreg partial_correlation
sePartiall	-1.02
	(-3.12)
globindcator	-0.00
	(-0.40)
noyears	-0.00
	(-1.47)
oecd	0.08
	(2.11)
latam	0.10
	(3.54)
left	0.07
	(2.84)
yrpublished	-0.01
	(-2.31)
nocountries	0.00
	(0.09)
socsecgdp	-0.07
	(-3.32)
xs	0.10
	(3.42)
tsxs	-0.30
	(-5.98)
kof	-0.06
	(-2.63)
scruggs	-0.03
	(-1.07)
political	-0.09
	(-4.46)
beckkatz	0.07
	(2.39)
socxpart	0.03
	(1.60)
Constant	12.24
	(2.38)
Observations	414
R-squared	0.39
N	414
r2_a	0.367
rmse	0.123

Table A-3: Vif values of model 1.

Variable	VIF	1/VIF
latam	4.37	0.228931
left	3.92	0.254826
yrpublished	3.31	0.302559
socsecgdp	3.03	0.329797
beckkatz	3.00	0.332998
noyears	2.90	0.344753
kof	2.57	0.388478
oecd	2.48	0.403859
political	1.95	0.513506
globindcator	1.94	0.514988
nocountries	1.92	0.520358
socxpart	1.75	0.570799
xs	1.75	0.572731
scruggs	1.68	0.595304
sePartiall	1.67	0.598340
tsxs	1.53	0.655354
Mean VIF	2.49	